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A MODERN PHILOSOPHY OF EDUCATION

By GODFREY H. THOMSON

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University of Edinburgh

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PREFACE

THE writing of this book, begun on an island holiday on Martha's Vineyard in the New World, and completed four years later on another island holiday on the Ultima Thule of the Old, has occupied a period of my life when circumstances have caused a rapid widening of my views on education. At its commencement I was Visiting Professor of Education in the department of educational psychology of Teachers' College, Columbia University, New York City. From there I returned to resume charge of the Education Department of Armstrong College, Newcastle-upon-Tyne, England. And after a year I was transferred to the chair of Education in the University of Edinburgh, originally endowed by legacies of Dr. Andrew Bell of monitorial memory, with which is now combined the post of Director of the Edinburgh Provincial College for the Training of Teachers. The rapid changes from England to America, back to England and then to Scotland, were well calculated to shake up any preconceived notions I might have possessed, and those which have survived the oscillation may, I suppose, be presumed to have a certain fixity of tenure in my mind. Meanwhile, I have renewed an acquaintance (which dates from 1901) with German education, where a revolution as great as can well be imagined has taken place. The chief impression left on my mind by the experiences of these four years is only a deepening of a former conviction, that one-half of the world does not know how the other half lives, and that when anyone is quite certain he has found truth it is proportionally certain that he is only

narrow-minded, as most of us are. Everyone sees the truth through his own special spectacles: and it is imperative that each should recognize that fact, and try on other pairs now and then. He will find that he and his neighbour see by polarized light, darkness to one being light to the other, and will perhaps recognize that to temper one view with a tincture of the other may give a more solid, a stereoscopic, picture of what might be.

GODFREY THOMSON

SHETLAND,
September 1928

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A MODERN PHILOSOPHY OF EDUCATION

CHAPTER I

THE MEANING OF A PHILOSOPHY OF EDUCATION

"I am sorry, then, I have pretended to be a philosopher."
HUME

"No wind makes for him that hath no intended port to sail unto."
MONTAIGNE

I HAVE ventured to call this book an educational philosophy. I do so in no presumptuous manner, and do not even pretend to be a philosopher in the technical sense. I only use the word to indicate that I wish to look at education as a whole, and try to make as consistent and sensible an idea of that whole as I can.

Philosophy means looking at the whole of a question, without restrictions or simplifications; looking at ends and purposes, not merely at methods and means, and scrutinizing the latter in the light of the former. It implies a scepticism of much that the popular mind accepts as unquestioned, and a delay of judgment until the whole matter has been thought out. It demands an effort after self-consistency, and it will have nothing to do with compromise.

True, a practical working philosophy may have to accept compromises; may have to set aside scepticism and

act as though this or that were certain; may have to renounce generalization and take as its aim separate "goods" which it cannot reconcile. But in so far as it does these things philosophy becomes a creed rather than a discussion. Indeed, this book has grown out of a series of notes and writings which I looked upon as my educational creed, and thought of publishing under that title. But, on further consideration, creed seemed hardly the word for a balance of opinions, which were yearly in a state of flux, in the mind of one who is philosophically agnostic.

It may be a consolation to some intending reader to be assured that no special study of the subtleties of philosophy is required of him. Everyone, however, in his ordinary reading, or even, if he be no great reader, in the course of his ordinary life, comes to form some notion of the meaning of terms such as utilitarianism or pragmatism; chooses in some measure between idealism or materialism, between a realm of ends or a universe of determinism; and takes an interest at times in the nature of the self, in the possibility of interaction between mind and matter, or in the real nature of time and space. At any rate, every teacher who is not merely holding his nose to the grindstone should at least occasionally do so.

In the training of a teacher, on the theoretical side, there can be distinguished the study of psychology, of method, of the history of education in the past, of its organization and administration in the present, and, as I think, the study of its philosophy. The latter gives a meaning to all the others. The teacher does not study psychology as a psychologist, or the history of education

as a historian. He studies them as means to an end. He may, it is true, become a psychologist or a historian in that deeper sense and study those subjects entirely for their own sakes. Indeed, unless he does so at times, and in some measure, he will probably not benefit by them: and they will certainly not advance if they are studied by all their devotees merely as means to an end, any more than would chemistry or mathematics, where notoriously the best way to kill progress is to demand results. Yet *as teacher* he studies them as means, for his aim is to learn how to educate.

From history, from psychology, from a study of actual methods, however, the student will arrive at somewhat conflicting notions of how to educate. The comparison and discussion of these conflicting notions is part of the philosophy of education as I understand it. From the same sources, and still more from his general experience of life—political, social, and religious—he will form ideas as to why he is going to educate children. To bring these ideas to clear expression, to confront opposed theories one to another, to make a reasoned choice between them —that, too, is part of the philosophy of education.

A philosophy of education must know something of biology and heredity, for education is a device which has a place in the process of evolution, and has enormously influenced evolution. It must know something of sociology and history, for the problem of education has depended in a very fundamental way on the mode of life of the people, on their manners, the density of the population, the nature of their arts and crafts, the form of transport in vogue. It must, implicitly or explicitly, take up some

position with regard to religion, though it need not and should not be associated with any particular creed. And it has to decide on the influence it will allow to political beliefs.

Probably the deepest question it has to answer is whether we educate mainly for this world or for the next. Possibly some might hold it still more fundamental to ask whether education is preparation for anything, or only a process which is its own end: but those who do appear to put this question (as does John Dewey) are, I think, only asking whether the best way to ensure successful preparation for some later and as yet undetermined period is not to forget that we are preparing, and live as completely as possible the present life, according to ideals which are made for it, and not for that future. That at least would be my own position with regard to education as preparation for a hereafter. The best preparation for a hereafter would surely be the best preparation for this life, for living this life in the best possible way. All turns, of course, on what we mean by *best*, and part of our deliberations, therefore, will necessarily concern that main problem of all philosophy, What is the highest good? to which all other objects are subsidiary, and only means to that final end. That is a problem which has exercised the greatest minds of all ages without definite solution, and we cannot, therefore, expect to solve it. But it is surely necessary to give it consideration, since our actions will be guided by some working hypothesis of the highest good, either consciously or unconsciously.

It is, I think, particularly on the sociological side that the theory of education needs extension, and will receive

extension, during the next two decades. Education is concerned with the problem of the individual and society, is, indeed, by some defined as the process of fitting the individual to take his place in society. It must, therefore, be interested in those studies which are of the individual, on the one hand, or of society, on the other—psychology and sociology. Now psychology has always been to some extent studied by teachers, and during the present century has improved education especially by making the actual individual, and not an average or a typical individual, the object of the teacher's and the administrator's care. But I am not aware that sociology has received equal attention from educators, and it appears to me desirable, without detracting from the value of psychology for teachers in training, to emphasize the equal necessity of some study of the laws of society, and the philosophical problems connected therewith. To me, the main problems of society present themselves as problems of population, survival, and selection, including migration, and I have a profound conviction that education must be closely concerned with these questions.

More definite and more immediately practical are the questions of interconnection between school and the requirements of business and industry. They have formed the object of inquiry for a number of committees, parliamentary and otherwise, during the last few years, and the conclusions of these committees are likely to have a lasting influence on the development of the educational system. Teachers' officials, workmen, employers, social workers, voluntary organizations, have all given evidence before these committees, and share in the credit for the

attempt at co-operation and in the responsibility for urging forward and carrying out the more immediately practicable recommendations. Perhaps the greatest responsibility rests on members of education authorities, of whom, though some, of course, are narrow-minded and comparatively ignorant of the educational methods of other times and places, and some definitely pledged to policies which have little of the educational about them, a large majority are well-intentioned and a number broadminded, well-informed, and unprejudiced, more so than many professionally engaged in teaching or administration. Such people, in my experience, tend to see the educational problem primarily as a sociological one, not a psychological one, and least of all as a teaching problem.

Although population questions are obviously within the province of the sociologists, and population questions are genetic and biological in their appeal to most scientists, yet the professional sociologist is not, so far as I have observed, genetically or biologically minded as a rule. There is, indeed, considerable difference of opinion between the geneticist and the psychologist, on the one hand, and the sociologist, on the other, concerning the nature versus nurture problem, to which two chapters of this book are devoted. Both sides no doubt will take refuge in saying that both nature and nurture are important, and inconceivable apart. But there is a real problem in spite of this truth, for the methods of curing certain social evils will differ according as one grants to the environment more or less power to change—if not permanently, at least in the present individual—the inherited qualities.

Now sociologists are, in the main, concerned with the improvement of the environment, though, of course, they do not confine themselves to the material environment, but include and, indeed, are chiefly interested in the spiritual environment of man, in his institutions, laws, and customs. They approve of many measures, such as unemployment insurance, improved housing with state support, etc., which have been attacked by extreme geneticists as cacogenic; and they are likely to take a somewhat different view of education from that of the psychologist. The philosopher of education must consider both, and if his own training and approach to the matter has been from the one side rather than the other, he must try, nevertheless, to see the other side and form a synoptic judgment.

Indeed, this idea of forming a synoptic view, of integrating into one system a number of opinions brought by individuals who have experienced different courses of training and education, is capable of wider extension, and application not only to geneticists and sociologists, but to students of all provinces of thought, who tend to have their own particular ways of viewing the educational problem. No one feels this more acutely than a Professor of Education, in his daily task of lecturing to a class of graduates from all faculties and in all subjects, many of them graduates in honours. In the first place, almost anything he says encroaches on the special subject of someone or other, who, possibly rightly, and certainly excusably, feels either bored by its elementary nature or amused by its errors and inaccuracies. And in the second place, and largely because of this, his efforts to

emulsify the oil and wine are, if not fruitless, at least of necessity herculean, so that he feels (to change and, indeed, to reverse the metaphor) as if the butter simply wouldn't come. Yet he believes that each of his students ought to like a little bit of philosophical butter with his royal slice of chemistry, or classics, or history, or whatever it is; that they ought not merely to be kings, but philosopher-kings.

CHAPTER II

THE FUNCTION OF EDUCATION IN THE BIOLOGICAL RECORD

"Not so much the survival of the fittest, but the fitting of the greatest possible number to survive."

T. H. HUXLEY, *Romanes Lecture*, 1893

"A chicken is ready for all the uses of life in three weeks, whereas it takes three-and-twenty years to make a curate."

SAMUEL BUTLER, somewhere or other. I quote from Helen Waddell's *Wandering Scholars*

By education I mean the influence of the environment upon the individual to produce a permanent change in his habits of behaviour, of thought, and of attitude. It is in being thus susceptible to the environment that man differs from the animals, and the higher animals from the lower. The lower animals are influenced by the environment, but not in the direction of changing their habits. Their instinctive responses are few and fixed, and continue throughout life in the form determined by heredity. When transferred to an unnatural situation, such an animal is led astray by its instincts. Thus "the ant-lion (Myomeles), whose instinct impels it to bore into loose sand by pushing backwards with the abdomen, goes backwards on a plate of glass as soon as danger threatens, and endeavours, with the utmost exertions, to bore into it. It knows no other mode of flight",[1] or if such a lowly animal is engaged upon a chain of actions and is interrupted, it either goes on vainly with the

[1] *The Evolution Theory*, by August Weissman, translated by J. A. Thomson. (Arnold.) 1904.

remaining actions (as useless as cultivating an unsown field) or dies in helpless inactivity. Thus a nest-making spider, removed to a new position when half the nest has been made, spins the remainder of the elaborate coverings in a tangle in the new location. Or another spider, which digs a burrow and rims it with a bastion of gravel and bits of wood, when removed from a half-finished home, will not begin again, though it will continue another burrow, even one made with a pencil.[1] Not entirely uneducable, as some patient observers have shown, such creatures are yet practically so. Their lives are the automatic and almost inevitable responses dictated by heredity.

Advance in the scale of evolution along such lines as these could only be made by the emergence of creatures with more and more complicated instincts. Such beings we know in the ants and spiders. But another line of advance was destined to open out a much more far-reaching possibility of which we do not see the end perhaps even in man. Habits, instead of being born ready-made (when they are called instincts, and not habits at all), were left more and more to the formative influence of the environment, of which the most important factor was the parent, who now cared for the young animal during a period of infancy in which much vaguer instincts than those of the insects were moulded to suit surroundings which might be considerably changed without harm.

This means, one might at first imagine, that gradually heredity becomes less and environment more important.

[1] *The Life of the Spider*, by J. H. Fabre, New York, 1913.

But this is hardly the truth, and is certainly not the whole truth. For although fixed automatic responses like those of the insect-like creatures are no longer inherited, although selection for perfection of that sort is no longer going on, yet selection for educability is very definitely still of importance. The ability to acquire habits can conceivably be inherited just as much as can definite responses to narrow situations. Besides, since a mechanism is now for the first time created by which the individual (in contradistinction to the species) can be fitted to the environment, the latter becomes in another sense less, not more, important. And finally, the higher animals who thus live more and more by habit, and less by automatic instinct, are also the animals who possess the power of changing their environment by engineering feats and the like, a power possessed to some extent even by the beaver, and pre-eminently by man. Environment and heredity are in no case exclusive but always supplementary factors.

The whole of the environment thus is the instrument of man's education in the widest sense: and just as, in an uneducable species of some lower animal, the environment kills off the individuals who are unsuited to it, and permits those who are suitable to survive and breed, so among an individual child's actions the environment encourages those which fit in and lead to successful activity, and kills off the other actions. Successful activity means in the first place activity which leads to the satisfaction of the primary appetites—hunger, thirst, the desire for warmth and comfort, companionship with one's fellows, love of the opposite sex, etc. Any chance means

of satisfying these will tend to become the habitual means if it is successful.

The education of an animal like a cat consists, then, in learning from the environment, during kittenhood, what actions bring such satisfaction. A kitten is often brought up in what is for it an unnatural habitat, a city dwelling-house. Although its instincts are much less adaptable than those of man, they are, nevertheless, sufficiently so to enable it to fit in to such a situation. Instead of the habits appropriate to a wild animal, it learns to return and mew at a door when it needs shelter, to be present in the kitchen at a certain hour to be fed, perhaps to beg for food by sitting up or climbing to its master's shoulder. Many of these actions it learns during its playful kittenhood by reason of that very playfulness, that desire to do many aimless actions for their own sake —to chase an inedible ball of wool, to rush round and gambol, to explore and experiment. Play is Nature's method of bringing the young of the higher animals into gradual contact with their environment, and of giving them opportunity to learn habits which will fit that environment. The "educator" is the environment, both animate and inanimate, and the function of the education is to fit the pupil to that environment, so that he may survive and have as many opportunities as possible of experiencing the pleasure of satisfying his instincts—instincts which are capable of redirection into various artificial habits, but are not less imperative than those of the creatures which are less educable, more automatic, more predictable.

Even at this stage the habits created may well take

the form of changing the environment, as when a kitten learns to open a door by pressing a latch. More and more, as we go higher in the scale of life, and especially as we go higher in the scale of human life from savage and barbarian to modern man, this method of active modification comes to supplement the passive adaptation. No less of the latter is required, indeed more is needed. But greater and greater attacks upon the natural environment are made.

And so the function of education comes to be more than we said above. Not only is the individual trained to fit his environment; he is trained to modify it, not merely in the way that the nest building or other instinctive actions of an animal modify it, but in new ways. Instead of specific instincts of manipulation, such as are given to the animals, leading them to very highly perfected but unchangeable constructions, there are given to the human child, and in much less measure to the young of the higher animals, comparatively random impulses to manipulate and destroy and construct, out of which education may create very different results, from cooking a pudding to making an airship.

And in this process of education it is not merely the *actions* of men which are integrated and directed along novel channels under the influence of the appetites. The latter themselves are modified in the process, are even in the beginning vaguer and less definitely outlined than are animal appetites, and take on their adult form by reason of the very educational process over which they preside. Instinct is blind, says the old saw. And so it is, but there are two kinds of blindness. The instinct of ant,

bee, or wasp sees very clearly the present stimulus, and directs very specifically the present reaction, yet is blind to the end to be gained. But in man, where there is perhaps less blindness of this sort, there is a blindness to just what is wanted now: so that, for example, the sex impulse which in an animal leads it to seek a mate, leads the young man or maiden, often utterly unaware of what the impulse is, to write or read poetry, to accept with fervour or reject with scorn a religion or a political creed, to worship nature, or to go forth on knight-errantry and adventuring. Not only are man's actions educable into skills and crafts, his appetites are also transformable into new likes and dislikes. And this is perhaps the most important part of education, for on it depends whether the pupil's ideals shall be noble or ignoble, the purpose of his life good or bad.

To put it all in another way, the function of education in the animal world was to enable the *individual* to survive and live out his complete life, wherein it replaced natural selection, which preserved the race by being prodigal of the individual life, improving the strain by eliminating the undesirables. Education did this by rewarding some actions and punishing others. Among the actions rewarded were those which made a radical change in the environment, and particularly is this so in man. Finally, the reward itself gradually changed, for whereas at first it could only be the satisfaction of an instinct, it presently could be the satisfaction of a habit, and as habits grew the possible variety of rewards grew likewise.

Looked at thus, education is seen to be for the individual. And in the long run this is indeed so. This

does not mean that education is for selfishness. For since education is to adapt the individual to the environment, and the environment consists in part of other individuals, education will in part consider how the individual will adapt himself best to his fellows. Indeed, this may come to be the major concern of education. But even should this occur, the object is still the individual life. The community exists for the individual, not the individual for the community, and education may not properly set the means over the end. The problem of finding the golden mean between education for the individual life and education for communal service and co-operation is one of the most important questions for the educator. It is easy to see that education should not be for subordination, but difficult to decide where subordination and co-ordination border. But though an important, yet this is not the most difficult problem of education. That chief difficulty is one which arises out of the very nature of education, which developed, in the animal world, as a device to preserve the individual. A high birth-rate and heavy natural selection will preserve a species and mould it to fit the environment, but does nothing for the individual as such. When education came in as a factor, it made so high a birth-rate unnecessary: but selection still went on, for those who were most educable would most survive. During the past century, however, among human kind in Western Europe, there has been a steady decrease in the birth-rate of the more educated classes, and this if continued would tend to breed them out. This would not matter, and did not matter, in those cases where chance factors alone had decided who were the

educated classes—in those cases, that is, where the educated were not intrinsically in any way superior to the uneducated. But, at any rate for a number of decades, the educated classes have been steadily recruited from the uneducated, and are undoubtedly somewhat superior, either in intelligence or in ambition and determination, in many cases in both, to the *average* of the classes from which they have been selected. So it would seem that education, having (in its first inception in the animal world) made natural selection for specific instincts comparatively unimportant, and replaced this by natural selection for educability, has now, in man, even reversed this last process and started the selective process going backward. If this were to continue, then for a while improved education might compensate for increasing biological inferiority, but ultimately the latter would win and man would sink back into an animal, or to some point of equilibrium where selection for progressive qualities again set in. There is, in the physical world, a very usual, if not an invariable, law of nature, that the products of an action tend to prevent its repetition or to diminish its intensity. So melting ice chills the atmosphere and checks the thaw—a good thing, else, had the reverse been true, a lake might at one moment be covered with skaters and the next be filled with swimmers and non-swimmers. So a moving magnet makes, in surrounding wires, an electric current which tends by its field to check the magnet. Were it otherwise, the latter, started ever so slightly, would move quicker and yet more quickly. Now education is like a mutual induction: for the environment moulds the individual, and the individual

the environment. And it seems that, in this fact of decreasing birth-rate among the educated, we have the check which Nature appears to put upon every process in the interests of stability. And so the great difficulty of education is, how to select and educate the most intelligent of the population without thereby removing them from the classes where families are large. An obvious but fallacious suggestion is to educate everybody equally. It is true that everybody ought to be educated, and everybody ought to have an equal chance of the same kind of education. But not everybody will profit equally by the same kind of education, even if they are put through the same schools. Take all the horses to the water, they will yet not drink equally deep. And those who help themselves most liberally to education will, under present social conditions, be likely to bear or beget fewest children, and to be bred out of the race. We hear much talk in these days of birth control as a possible remedy for this: but the final remedy must surely come through changes in social values inculcated by education.

To recapitulate, then, we have decided that the function of education in the biological record was to accommodate the individual to the environment, either by passive acquiescence in its requirements or by active interference with it, and thus to save him from the tremendous destruction which went on under the former plan of producing enormous numbers of offspring of high variability and destroying in infancy or youth those individuals who were unsuited to their surroundings. Education did this with the aid of a period of dependence on the parents, during which the young *played*, as we say, the January

of life, looking both ways—to the past which they were recapitulating in their own lives, and to the future which that play adapted them to, by fitting these old recapitulatory responses to new stimuli and in new combinations. Selection among responses thus took the place of selection among individuals. But if progress is to continue after a certain point, the latter cannot be dispensed with altogether; and still less can we look with equanimity on the prospect of a competition between the two sorts of selection, with education struggling to select and train responses, while survival encouraged the gradual diminution in the richness of the responses among which such educational choice could be made. In other words, although selection for specific responses is no longer required, selection for richness of response, complexity of response—probably, in short, for what we term intelligence—is still necessary. And in present social conditions our educational system tends to remove intelligent children from a more prolific to a less prolific social class, and thus to set in motion a resistance to the progress it is endeavouring to encourage.

There is, however, another side to the phenomenon of selection and survival to which we must now turn, in order to supplement and in part correct what we have so far said. We have spoken of the responses of the automatic creatures of instinct as being either suitable or unsuitable for survival in the environment. But even among those automatic responses, in species of beings where each individual lives entirely for itself, where there is no family life, possibly where each individual is produced from an egg laid last season by a long-dead parent

insect, there may be responses which paradoxically have a survival value although they lead to the immediate death of the animal acting thus. For example, I am told that a honey-bee, when it stings me, causes its own death, unless, indeed, I kindly give it time to withdraw its sting by a slow, screwing motion; under the usual circumstances it stings, wrenches itself away, and thus tears the sting and half its body out and dies. And if this is not accurate, it is immaterial to my argument, for it clearly might be so, and yet be of advantage to bees in general to act like this. I hesitate before I attack a bee, and many bees have owed their survival to the fact that they can sting, and will do so even if they surely die. Also, the bee need have no feeling of self-sacrifice in acting thus; it is only necessary for it to be endowed with an impulse to sting, if disturbed. Indeed, a species of animals in which each lived a solitary life, ignorant of the existence of its fellows of the same species, except when mating in perhaps the closing hours of its short life, may be imagined, in which this act of stinging would still be an advantage to the commonweal, though no common life were lived.

It is clear, therefore, that actions which are harmful to the individual when he actually performs them may be helpful to him in surviving—from his known readiness to perform them, which prevents attack. The individuals which do actually perform these actions may die, and may therefore be said to have sacrificed themselves for their fellows or for the race. But in the kind of case we have pictured so far there need be no true self-sacrifice, for it is imaginable that an instinctive impulse to act in such and such a way could exist without any idea of the

consequences, or even without knowledge that other individuals existed.

Where the members of the species live together in communities, however, or are accustomed to go about in bands or swarms, instinctive actions essentially similar to these may come to have all, or almost all, the external appearances of altruism. An insect may, for example, be endowed with an instinct to flee from a visible but distant enemy, and with another instinct to attack an enemy close at hand, even though death is the certain result. In such a case, when an enemy approaches a swarm of such insects and succeeds in reaching a certain proximity before being discovered, the nearer insects will be seen to rush to the attack and die, while those farther away escape. And if, as is probable, there are slight individual differences in the distance at which the one instinct is replaced by the other, there might even be seen a few individuals pushing to the attack and to death through the ranks of others who were fleeing to safety. Others, who happened to be just at that distance where the two instincts balanced might be observed to hesitate, until finally either "cowardice" or "self-sacrifice" got the upper hand by some slight turn of events.

In such cases, however, we need ascribe no internal emotions to the actors, such as we ourselves would feel in similar circumstances. We are, of course, entirely ignorant of what it feels like to be an ant or a wood-pigeon, though it may be presumed that some glimmering consciousness, even a dim self-consciousness, is part of that feeling; and also fear and anger. But the complexity of their responses is so much less than ours that the more

complex states of our consciousness, at least, must surely be also absent. It is otherwise when we come to higher animals, where a period of education during an infancy has largely replaced specific instinctive adaptation. There, especially in man, the picture we have drawn is one of plastic rather than well-defined and specific instincts. Probably that is the same thing as extreme complexity of instincts, so that there is great uncertainty, much blocking and interference, much possibility of selection. The environment of childhood practises some responses and ignores others, combines responses into groups, and classifies the kind of situation met with. And of that environment an important part is the group of fellow-members of the species with whom the individual child lives.

The mere fact of infancy forms such a group, if other circumstances have not done so, for it makes the family, at any rate the group of mother and children, essential, and the family easily grows into groups of relatives, or the tribe. Now it will be to the interest of the tribe to encourage certain acts of self-sacrifice in war, or in combat with the elements, as in a storm at sea, since the tribe which does thus encourage such acts will, as a tribe, acquire a survival value. The education of its immature members will, therefore, consist partly in encouraging such actions, by rewarding them by public commendation, by prestige and power, and by creating play situations where opportunities for exercising them occur. The emotions and feelings of the individual are thus directed in the desired channels, emotions and feelings which, in one view of the matter, motivate the external behaviour, or,

in another, are the inside shape and form of that behaviour, the expression in consciousness of the complexity of adjustment that behaviour requires.

Now we said earlier that education was for the sake of the individual, and arose to save him from that decimation which accompanied simple survival of the specifically fittest. Here, however, we have arrived at education which is for the tribe. But it is still for the individual, for all that. For to enable the tribe to survive is to enable the individual to survive. That the individual should be ready to act bravely in war, even to death, may often be the means of leading to his safety, because it makes his tribe feared and respected. And other instances than war will occur, lest I be accused of preaching a doctrine of jingoism, which is far from my mind. For example, the storm at sea already mentioned may serve, or any other natural tribal danger, if we suppose the crew of the primitive vessel, as is probable, to be all of one tribe. That there should be one person on board willing to cut adrift the threatening spar although he himself perish, is more likely the more such persons there are among the tribe. Not only the individual who perishes, therefore, but those who survive, are likely to be endowed with this quality; and although the individual with the greatest degree of it is not likely himself to be the parent of many of the next generation, his relatives are more likely to be such parents than are the relatives of a less courageous person, who are likely to perish as a group, whether in shipwreck, or in war, or in other struggles. Nor need the quality be of the nature of pugnacity or physical daring. All altruistic qualities may obviously have a survival value

in this second-hand sort of way, and to possess them may lead to personal advantage in most, while leading to death or disadvantage in only few cases. To call attention to this, however, is not sufficient to cause altruistic qualities to be cultivated: it is universally found necessary to praise them for their own sake, to associate with them the greatest admiration, and to train a habit of mind in which the intangible rewards they bring with them are valued more than the tangible wounds or losses or deprivations.

An educational system, therefore, may have survival value for a tribe or for a nation, obviously when it is in a state of war with other nations, less obviously but probably equally assuredly when it is merely competing, as it must, in the arts of peace. But as an educational system is not something which is inherited, as a black skin, or red hair, or any other biological unit factor, it must be passed on by social inheritance. The connection with biological inheritance, however, is this, that such social inheritance will only occur in communities where certain biological qualities distinguish the inhabitants, such as intelligence: though it is not necessary that all the members of the community should possess these biological qualities, whatever they may be in any case. It is sufficient that some should do so. Indeed, in many cases it is preferable that only some should possess any particular quality, as the qualities desirable in a nation may possibly be incompatible in any one person, as tallness and dwarfness are certainly incompatible, and such pairs as artistic sensitivity and common sense in money matters possibly are. In any tribe ordinary

selection and evolution might care for this necessity for differentiation in the members of the group, but it may also be the function of education to encourage and emphasize such differentiation as is found, and to fit different individuals to suit the environment in different ways, that they may be mutually helpful.

Adam Smith, in the famous first chapter of the *Wealth of Nations*, has emphasized, in a manner which has persuaded all future generations, the importance of the division of labour in making nations prosperous. The reason is simply that when an individual restricts himself to the performance of one or two acts, or the production of one article, he becomes so much more dexterous that production is greatly increased, and all, by exchanging their now abundant products, may live in greater comfort than before. Now this greater dexterity is produced by education, either conscious, as in apprenticeship or in trade school, or unconscious in more primitive societies, where mere participation was the only educational system. Adam Smith, indeed, was of the opinion that differences in opportunity and education accounted for far the greater part of the differences we see in men around us. "When they came into the world", he says, "and for the first six or eight years of their existence, they were, perhaps, very much alike, and neither their parents nor playfellows could perceive any remarkable difference. About that age, or soon after, they come to be employed in very different occupations. The difference of talents then comes to be taken notice of, and widens by degrees." We do not nowadays agree that the original differences are so slight,

nor perhaps would Smith have thought so had he been himself a parent. Indeed, he does not by any means entirely deny original differences, even in the above quotation. And elsewhere he speaks as though the educational differences were imposed upon differences already existing, as when he says, "In a tribe of hunters or shepherds a particular person makes bows and arrows, for example, with more readiness and dexterity than any other", and argues that he then, and for that reason, finds it advantageous to become a kind of armourer, and obtain his cattle or his venison by barter. However, everyone agrees that education can tremendously deepen differences. And if division of labour is essential to prosperity, it may be a function of education to do so.

Not everyone agrees, however, that prosperity and happiness are equivalent terms; indeed, I suppose no one thinks so. And it is certain that a community in which the division of labour is not carried to excess is sometimes happier than one in which that has occurred. Here in the Shetlands, for example, and at a distance of four hours' sail from the capital of those islands, while there is an increasing dependence on communication with the outer world, the communal life still sufficiently resembles what it must have been when that communication was almost *nil*, to be very instructive. *All* the men are skilful boatmen, quite good carpenters, building their own boats, knowledgeable in both sea and burn fishing, farming a small croft, plucking sheep, cutting and drying peat, repairing houses. One has to inquire who repairs shoes, for he is not outwardly discoverable; and even the driver of one of the few but increasing motor-cars can be seen

digging in a croft with the curious Shetland spade, narrow so as to miss the stones, or fishing in the Voe for a good part of his time. The school-teacher and the minister are almost the only complete specialists, and in the season the sail-maker. And the general impression is of greater happiness than in an industrial city, where there is much division of labour, and where there might be greater plenty if the produce were shared.

There is something to be said, therefore, for a function of education opposed to the tendency to deepen differences, a function to maintain the common qualities and to develop them to the highest point. The extreme monotony of the occupation of many, reduced to the performance of one or two simple acts with the assistance of machinery, may be balanced by an education which teaches them to use leisure properly, and by doing so enables them to retain their general vigour and happiness, and thus even to perform those special duties more effectively. The right balance between education for a vocation and education for just being men and women is a matter which will always remain fundamental for a philosophy of education.

CHAPTER III

THE FACTORS OF EDUCATION AND THE FUNCTION OF THE SCHOOL

"In those parishes . . . the life of a labourer might be itself more instructive and intelligible than that of his counterpart, the urban artizan. . . . He saw the nature and meaning of his industry, often the whole of the processes and their connection with social and domestic needs. . . . Not only was the supply of daily needs a labour which conveyed its own lesson, inspired interests and exercised habits of organization and self-discipline; but the intimate relations subsisting between the various functions of a village group rendered its life in some measure an intelligible whole.

"Economic change is continually . . . undermining influences which formerly controlled and educated. . . . Thus it is that the school has come to occupy a larger place in education than formerly.

DOBBS, *Education and Social Movements*, pp. 16–17

"It is otherwise in the barbarous societies, as they are commonly called, of hunters, of shepherds, and even of husbandmen in that rude state of husbandry which precedes the improvement of manufactures and the extension of foreign commerce. In such societies the varied occupations of every man oblige every man to exert his capacity and to invent expedients for removing difficulties which are continually occurring. . . . Every man, too, is in some measure a statesman and can form a tolerable judgment concerning the interest of the society."

ADAM SMITH, *The Wealth of Nations*, Book V, chap. I

THE whole of the environment is the instrument of man's education in the widest sense. But in that environment certain factors are distinguishable as being more particularly concerned: the home, the school, the church, the press, the vocation, public life, amusements, and hobbies. The home is most influential during infancy, school during childhood, the vocation and amusements during early manhood, the press, public life, and the church during middle age. I have not mentioned books; for books

are used as a tool by all other agencies. Yet for some men they become an independent element of immense importance.

Of these factors the only one which is concerned solely with education and with nothing else is the school, by which I mean the whole educational machine from kindergarten to postgraduate university course. The school might, therefore, reasonably be expected to endeavour to co-ordinate the other factors, to see that overlapping is avoided and gaps filled out. With one of these other influences, indeed, co-operation has become peculiarly difficult, for in the warring of the sects it has been found in some countries impossible, and in all difficult, for the schools supported by public money to be associated with the teaching of religious dogma.

The task of the school has been variously interpreted, and in these differences lie the characteristic traits of schools of different nations and of different epochs. The prevailing tendency of state schools is to give intellectual training to a preponderating extent. The school is taken to be a place where first reading, writing, and arithmetic are learned, and then other studies. Discipline and school tone are valued, but mainly as being necessary for that intellectual training. Now there is no doubt that intellectual training, in the sense of book-learning and abstract reasoning, is the task which can least successfully be cared for by the other educational influences. And in decades when there have been large numbers of illiterates in the population, it has been the "learning" the school can give which has been valued, and rightly so. Where there are no schools, there may yet be highly developed skill in

craftsmanship, there may yet be fine character training, there may even be traditional learning passed on by word of mouth: but there will not, as a rule, be the ability to read. Without schools, the children of illiterate parents will grow up as illiterates, and some children of literate parents will do so also, and so illiteracy will grow. A civilization in which a majority of the citizens is unable to read is nowadays unthinkable, even though cynics may pretend to wish for it. And so in a sense the essential task of the school, the task which no other agency carries out under usual conditions, is to teach its pupils to read and to know good books. How narrow an aim this can become we shall not deny, and that it is far from being the most important task of the school we shall indeed presently urge; but it seems to be its unique and essential task.

We must not confuse the importance of a task with its uniqueness. The essential duties in life of John Jones, a crossing-sweeper, those which define him and distinguish him from other men, are those of his vocation as a crossing-sweeper. But his most important function in life may be something quite different, perhaps to rear little Jack Jones, who is one day to write an imperishable poem. It is more important for a crossing-sweeper to tell the truth than to sweep his crossing: but the latter is his essential, characteristic function. So with the school. Its most important functions may not be to teach reading and writing. But those are its peculiar functions which are not otherwise cared for in the community, except in very small measure, for not many children are taught to read in the home or learn by the observation of street notices.

Quibblers may retort that it is possible to imagine, or to point to, schools which do not teach reading and writing even in the widest sense. But practically all schools do so.

In commercial circles a common criticism of the schools has been, for certainly twenty years and perhaps more, that they no longer attend to the three R's thoroughly as in the good old days, but fritter their time away with all kinds of fancy subjects, such as nature study or European History or folk-dances. This criticism is in part, but only in part, justified. To a considerable extent, however, it is illusory, or misinformed, or ill-conceived. It is illusory because it is partly based on the very common human weakness of glorifying the days of one's own generation and belittling the new, and partly because it takes little or no account of the very much higher percentage of the population who are now literate, and the fact that all children now pass through school and not, as formerly, only those who themselves or through their parents had a desire for it. It is misinformed as to the actual extent of weakness in the three R's, and as to the relative accuracy in spelling, simple arithmetic, etc., of children of to-day and yesterday, and also as to the school programmes. For these critics do not always stop to think that reading is not a thing which can be taught without reading something, and that this something might as well be nature study or European History if those are interesting to the children: in short, that many of the so-called fancy lessons are in fact lessons in reading and writing, if not in arithmetic. And it is ill-conceived, for there is no doubt in the minds of most who are in the best position to judge

children, that were the schools to direct their energies exclusively to grinding up the three R's, commercial houses would rapidly find their young clerks much less employable than at present.

But there is, nevertheless, an element of justice in the criticism, and it is worth while considering how the element of weakness thus disclosed may be strengthened. The cause is, as the critics rightly see, the greater width of the curriculum to-day. As one subject after another has claimed a place in the curriculum, there has been little or no discrimination between the subjects as to the manner in which they should be treated. They have too much been taken as separate subjects, and the same standards of accuracy have been demanded in all. In several quarters, however, notably in America,[1] where the disease is worse, it has been urged that some subjects are to be completely mastered, while others do not need the application of rigid standards of achievement, but rather are to be enjoyed as expressing the personality of the pupils, giving opportunity for co-operative work not possible in the individual mastery subjects, and supplying incentives for the study of the latter.

Working on these lines, it is conceivable that a com-

[1] Especially by Washburne of Winnetka; and also in Germany. For example, in *Die Lehrerfrage in der neuen Schule* (Weimar, 1927), Vladimir Spasitsch says: "The instruction in the *Lebensgemeinschaftschule* is often divided, especially for the older classes, into *Kern-* and *Kursunterricht*, essentials and courses. In the *Kernunterricht* those matters and those techniques are handled which all children must master. *Kernunterricht* is, therefore, obligatory for all. In the *Kursunterricht* those materials and techniques are handled which serve to discover and develop the special qualities and powers, interests and gifts of the children, and hence such courses are for the most part elective."

mittee of teachers and employers might decide just what parts of the three R's and of knowledge subjects like geography and history are really essential to all normal children, and what standards could reasonably be exacted in these at each age. It would, I think, be found that these minimum essentials were a good deal less than is commonly realized. The kind of arithmetical sum, for example, which actually meets a boy or girl in the course of employment is not, as a rule, difficult, but requires absolute accuracy. That accuracy, in those simple sums, employers are entitled to exact from the product of the schools, and similarly with spelling and reading. More than this they are not entitled to require from every child. And in only a part of the school-day, if a determined attack was made on accuracy for that period, the necessary standards could be reached. It would not be necessary to keep every child at this work equally long. Some would finish and get away to their expression work sooner than others. But all would have to master each step and achieve the standard accuracy and speed in the fundamental operations of the tool subjects. This done, let the rest of the day be spent on education rather than training. Both sides of school work are equally valuable, and, moreover, the other lessons could be made to supply incentives to keep the mastery subjects up to the mark, both because the child could not take its place among its compeers unless it had learned what was required, and because the co-operative tasks which groups of the scholars would, I hope, undertake would lead to a need for those very weapons which the mastery periods were intended to polish.

It would have to be considered unprofessional in a

teacher to give any drill work for accuracy in the fundamentals to children who already were up to the determined standards. Such pupils should be allowed to go on with freer work, and only tested in the required accuracies from time to time. And there would have to be a determined opposition to any attempt to make these standards anything more than really minimum essentials. So far, but so far only, the work of the school might be submitted to standardization, drill methods, and the production of results: but only on condition that the rest of the school-day, and the rest of the school work, was free from the requirement of individual results, and permitted to be enjoyable, buoyant, vital activity for the work's own sake alone.

It can, I think, be truthfully said that many schools do to-day approximate to this solution of the difficulty of finding the *via media* between total disregard for "results" in the three R's and slavery to them.

Thus far, then, we have noted two duties of the school: to co-ordinate the other educational factors of the environment, and to give "book-learning"—the latter task being that for which the school in most societies was originally created, the book-learning being usually required in the service of the religion of the people, to provide a priesthood, or to permit of the organization of society as it became more settled and in need of land-measurers, of lawyers, of book-keepers. Now that education, at any rate, up to the end of the primary stage, is given to all children in those countries which concern the reader of this book, we have to note that by giving book-learning the school enriches the whole environment, makes a wider choice of

vocation possible, opens the door to the influence of the Press, and modifies every other element of the larger education.

Co-operation with the home varies a great deal with the type of school. The boarding-school almost replaces the home when it is the place of residence for eight months of the year for some six or more years of life. The state school co-operates with the home only in a limited sense. There is often a conscious effort to obtain the good-will of parents, and to supply those elements of training which from the nature of the case and from no fault of their own the parents are unable to supply.[1] Thus there may be a direct attempt to compensate for poverty and squalor in the home by a more marked emphasis on cleanliness in the school, to displace a city slum speech by a better accent, or, where the dialect spoken is not a corrupt but merely an ancient form of English, to supplement it by the national tongue.[2] How difficult these tasks are, how strenuously they are attempted, and how little is on the average accomplished, is well known to all who are familiar with schools. Of late years there have been formed in many schools "Parents' Associations", whose avowed object is to bring teachers and parents into closer contact,

[1] Pestalozzi makes Gertrud say: "You should do for the children what their parents fail to do for them".

[2] Except perhaps in Scotland to some extent, we do not in Great Britain really do much in the direction of encouraging bilingualism of dialect and standard English. I remember my surprise and delight at a lesson in Alsace in 1905, on a dialect poem, *Wo bist du g'syn?*, given and heard mainly in dialect, but with the poem afterwards translated into proper German. And I observe that in the Italian instructions for the second class of the elementary school there is included "retelling in good Italian a story told in dialect by the teacher or by a pupil".

and give the latter a better understanding of and some voice in deciding the details of their children's education. Some of the meetings (usually monthly during the winter) of such an association are social in nature, at others members of the school staff explain and illustrate methods new since the parents' own school-days, and on yet others visiting educationists speak of larger movements. By these means, indeed, a form of adult education may be carried on, in which, for the sake of the children, who are its primary care, the day-school influences the older generation.

Co-operation with parents is essential, if for no other reason because the alternative is ousting the parents, and doing by means of the school many things which in simpler times were done by the home. The dangers of that are obvious, being mainly two: the danger of weakening the feeling of responsibility which all parents ought to experience, and thus replacing a very stable and certain, if nowadays somewhat inefficient, means of education (the home) by an efficient but easily destroyed means (the school), which in times of trouble, war, or political unrest might fail us; and the danger referred to below, of creating as sole means of education a closely organized institution which might be captured by some propagandist body and used for its own ends, contrary to the wishes of the parents, who may be ignorant of what is going on. The advance in complexity and division of labour in our society has made education by the parents alone impossible, but care should always be taken to co-operate with them, who are a definite body in the community, not identical (especially since recent changes

in the franchise) with the general body of the electorate, either municipal or national.

The difficulties and necessity of co-operation with parents, and the dangers of removing responsibility from the home, are seen very clearly in the period before the compulsory school-age of 5—a period when, in the opinion of many, there is caused, by the largely unavoidable inefficiency of the home, a great deal of mental and physical defect which has to be fought afterwards in the school proper. Hence the urgent proposals to form nursery schools or nursery classes. But as their task, although complex, is perhaps most clearly perceived under the head of physique and health, we may postpone discussing them for a few pages. At the other end of school-life, when the pupil nears the time for going out into the world, co-operation with the parent again takes on a special form in connection with the choice of occupation. This also is discussed elsewhere.

We have frequently in this chapter asserted that, although the primary task of the school is to give letters, yet this is not its most important task. That, in the opinion of many, is the training of character, and it is a duty which has been more and more thrust on the school by the changes accompanying the progress of civilization. This is one of the points strongly emphasized by Professor Kilpatrick, an avowed disciple of Dewey, whose philosophy of education forms the subject of a separate chapter, but which may be considered here as far as it concerns the present idea, that much character training, which in a simpler society was cared for by other agencies and by the general life of the community, must

now, in our complex civilization, be looked after by the school, the whole atmosphere of which is thereby changed.

As a sample of the simpler society to which they look back, the American exponents of the present argument naturally turn to the life of the early colonists, especially the Pilgrim Fathers, or to the pioneer life of those who formed the vanguard of the Western Movement. For these the life of their little community was simple and open to view. It might be a single family in a lonely log-cabin or a group of not very near neighbour families. In either case the tasks of life were set by stern necessity, were easily understood, and required the co-operation of all. Food was hunted by the adult males, cut up by them, cooked by the mother, for whom the fuel was naturally collected by the boys. The process was seen in its entirety, and shared in by all in their measure. Or the field was ploughed and harrowed, the seed sown, the crop harvested, ground in the family hand-mill or taken to a miller who was one of the little community and whose mill was known and understood by all, baked by the mother, and eaten with an understanding of the labours it had cost and the beneficence of Nature which had made it possible. Or again, the clothing they wore was seen in process of manufacture, from the shearing of the sheep onward. Such a life taught self-help combined with co-operation, brought its own rewards, and punishments if it was not lived properly, and could be learned by simple participation on the part of the young, for whom it was never necessary to make artificial tasks, for an abundance, easily understood by them, and seen by them to be

necessary and within their powers, arose in the daily communal life.

Contrast, however, the life of a child in such a community with his life in a modern centre of civilization, and to make the contrast most striking, take the most extreme case, a child living in a New York apartment house (or a city flat in London or any large city). Here civilization is complex, artificial, largely hidden from view in its inner workings, and lacking appeal to the child's understanding or his natural feelings of co-operation and community of interest with his fellows. He cannot learn to take part in it by simple participation, except in its parasite activities, such as selling newspapers on the street. None of the necessary operations of obtaining food or clothing or shelter can be seen in their simple entirety. Food is something to be bought in a shop, often ready cooked: clothing mysteriously arrives finished and ready to wear: and father and mother certainly do not take any obvious part in preparing either. Although men in such a society are still more dependent on the co-operation of their fellows than in the pioneer community, the co-operation has become so complex that it is not seen or understood. The factory is a place with "no admission except on business" on its gates, in contrast with the mill, the wheelwright's shop, the potter's shed, or the tannery. There are few or no natural jobs which fall to the lot of the children and teach them to bear their share in the life around them; no chores such as splitting wood, or bringing in the cows, or helping in the dairy, or knitting the legs of the absolutely necessary stockings which cannot be bought but must be made. Artificial jobs about the home may be invented for

such children by a mother who instinctively feels their wholesomeness, but they cannot be the natural tasks arising from the family life, and so do not carry with them the same training in character.

Under these circumstances the school has a task it did not have before, the task of supplying an environment which will approximate, in opportunities for character training, to that pioneer environment, a task which, if we value social solidarity and comprehending co-operation, we will rate as more important than its primary task of supplying letters. If this view is the true one, school should be a place where a natural communal life can be lived by the children, a life which will provide natural tasks to be performed, some individually and many in co-operation; which will supply problems to be solved, by action, not merely arithmetical or other problems in a book to be figured out, though figuring and reading will be found necessary and will therefore be learned willingly; and in which situations will occur where conflict can arise and the need of its solution be felt.

This doctrine is obviously similar to, indeed the same as, that preached by many German writers; for example, by Krieck, who extols the *Gemeinschaftsleben* of the progressive German schools. It goes farther than mere self-government in the usual sense, which is that a portion of the school discipline is handed over to committees of the pupils. It amalgamates the disciplinary side of school with the learning side, and the same problems upon which a group of children are engaged are at one and the same time the source of their book-education and of their training as citizens of their small community. To those

who hold these doctrines, the division of the school time-table into artificial subjects is anathema; but so also is an organization like the Dalton Plan, where, although the time-table is wholly or partly abolished, yet the school-work is very definitely prescribed by authority, and is individual, not co-operative.

The root idea at the bottom of this theory of the function of the school is that it must *be* a community, wherein those virtues only to be learned by taking part in an understandable communal life may be acquired. The school community, however, though simple, must not be stereotyped and delineated by authority. It must be a natural growth and progressive, so as to pass without break over into the growing and progressing life of the outer community of to-day, which no longer has such fixed forms as had the older type of society. Industry, trades, commerce, forms of government, have changed tremendously since our grandparents were children, and are likely to change more. The school, therefore, has lost the definite goals to which it might in an earlier century have looked, had universal state education then been introduced, the definite occupations to which its pupils might have looked forward, and the familiar forms of society and government which they could have anticipated. Instead, it has to prepare for an unknown future, wherein rapid change is certain, wherein trades will disappear and new occupations arise, forms of government will alter, and social conditions go into the melting-pot. It must train for adaptability.

In the past the school has not infrequently been used as the tool of some other institution, a church, a political

party; has been employed to influence a national quarrel or a racial tug-of-war. What is to be our attitude towards any such claims, or the danger of such influences, to-day? The problem is so thorny that many take refuge in restricting the school to that narrow function of giving literacy which we have admitted to be its original and peculiar task. As far as religion is concerned, America has banned it entirely from her state schools, and left it to the churches: and if a denomination believes that the religious teaching it considers necessary can only be given in a full-time day-school with the desired religious atmosphere at all times and in all lessons, then such a denomination in America must pay entirely for the school it wants, though it is permitted to have it if willing to pay. England (and Wales), in the "provided" state schools, has an hour set apart for religious teaching, but stipulates that this must not reflect the particular doctrines of any sect, but only give teaching in the tenets of the Christian faith common to all Christians, from the Bible; and, moreover, the parents may withdraw the children during that hour for instruction elsewhere. In the "non-provided" schools teaching in the doctrine of the church providing the building is given. The church in question pays for repairs and extensions, and has a veto on the appointments to the teaching staff, but the running costs are borne by the state. In Scotland practically all schools are either Presbyterian or Roman Catholic, are built by the state or bought from the church, are run by public money, and staffed by teachers of the same faith as is officially taught in the school. In Germany most schools are of a particular denomination, usually Lutheran or Roman Catholic,

even though state supported; but some schools which have children of both religions have a proportional number of teachers of these religions, and re-classify their pupils for the hour of religious instruction. The *Weltliche* schools are, I am told, anti-religious, Marxian in philosophy, and only found in the communist quarters of great cities. It is hard to find any principle to which to hold fast in such a difficult question. Religious toleration and freedom to worship as conscience dictates are agreed to, at least outwardly, by all. Few, however, push this to the length of avoiding an appearance of influencing children towards the religion they themselves follow, and most would consider such an extreme form of "toleration" as sheer wickedness, and leaving to chance influences what ought to be the most painful care of the older generation in its influence on the younger. For good or for ill, however, the state school of most European and American countries nowadays leaves this matter very much to one side, either explicitly and avowedly or practically, and it is certain that if state schools, even in those countries which permit and encourage the teaching of religious doctrines, were to be employed very actively in the propagation of that religion, especially in the conversion of the children of those of other sects, there would be a strong public movement against them. The general principle seems to be, that anyone may worship as he likes, and may do what he likes, individually or in concert with his fellow-religionists, to bring up his own children in that faith, short of interfering with the liberty of others. If his faith is that this can only be done in combination with the whole education of the children in their ordinary

schools, then the states in various ways have shown themselves willing to co-operate with him, closely in Scotland and Germany, indirectly in England, and only by permitting him to contract out altogether in America. No country has to my knowledge (I exclude Russia, of which I know practically nothing reliable) enforced a law compelling all children to attend a state non-religious school. Germany has passed and is enforcing a law to compel all without exception to attend state schools, but these teach religion. America has excluded religion from the state schools, but still permits "parochial" schools to take their place. I do not speak of France, of which I know too little, or of Italy, where recent changes have reintroduced religion into state schools, though in ways of which it is still too early to foresee the effect.

Other questions of belief are only a step less difficult of treatment in the school, especially the state school. National pride and patriotism, for example, is, in its purest form, a worthy sentiment, and one without which a boy or girl could hardly rise to still higher ideals. But, quite apart from the obvious danger that pride in one's own country may pass over into contempt and enmity for another, there is the difficulty that within one's own country different parties have different ideas of what we ought to be proud of. America has had to teach American patriotism more obviously than other countries because of her immigration problem. There, Old Glory stands on every school platform, and hangs in most classrooms. We do not display the British Union Jack in the same way, and if we had, I fear that in some recent years it might have led to friction, as even the observance of Empire

Day has. It seems that in these matters of sentiment, and certainly in matters of party politics, a principle not unlike that ruling in respect to religion has to be observed, and controversial matters kept out of the schools, or admitted only under strict safeguards. All this means that, while the function of the school has been widened by the progress and complexity of our civilization, it has also in other directions been narrowed, chiefly because it has become a state school and therefore very sensitive to the sentiments of conflicting bodies of thought in its public. It has to train character in a way not necessary in the primitive community, as Dewey asserts. But it must do so without much reference to religion, and without any to party politics, which are coming more and more to include sociological questions of the very essence of the problems the school as a microcosm of the outer world must itself experience. America has a less problem in the political sense, since it practically has no party politics in the Englishman's understanding of those words. No Englishman could ever distinguish between Republicans and Democrats except by means of a mnemonic, and exponents of a more radical type of thought do not appear to exist in sufficient numbers there to "cut any ice".

Luckily there are some forms of propaganda against which few, if any, have a word to say: for example, propaganda in favour of health and sanitation. That this is necessary and permitted is directly a result of our civilization, which has brought larger numbers than ever before into cities and under the influence of unnatural conditions of life even in the country, and indirectly a

result of that civilization, which has undoubtedly made us all more sensitive to these problems. The growth and influence of the school medical service is one of the wonderful features of educational history in the twentieth century. The spokesmen of the medical profession want more treatment, and less mere inspection, to form part of that service, especially preventive treatment. They are anxious that there should be more direct teaching of hygiene and sanitation in the schools by the regular teachers, and they approve of the teaching of cookery, homemaking, and nursing to girls before they leave school, since in very few years many of them will become the mothers of a new generation of school-children.

Not only in this matter of sanitation, but in all the newer ways in which the school is desired by progressive educationists to function, it seems as though the van is going to be led by the babies. It has been a commonplace for a quarter of a century that the infant schools were the best schools. I will not venture to guess why, whether because of Froebel's, and, later, Montessori's, influence; or because in them woman has almost a free hand, while other schools are man-made; or merely because the shadow of examinations is still far distant, and the teachers can educate without doing it to order. Anyhow, even the infant schools are now superseded in progressiveness by the nursery schools, which care for toddlers between two and five. Their aim, in the words of Dame Margaret McMillan, is "to supply a nurture day of nine hours", during which the toddlers form a community in which cleanliness, fresh air, and good habits rule; in which

the behaviour needed in a community is learned by doing; in which freedom of individual action is never repressed, and is unchecked except by the harmony of the community; and in which all activity is spontaneous and all interest immediate and intense.

CHAPTER IV

REFLECTIONS ON THE AIM OF EDUCATION

" . . . the objects of nature, the achievements of art, the imaginations of poetry, the incidents of history, the ways of mankind, past and present, and their prospects in the future . . . there is absolutely no reason in the nature of things why an amount of mental culture sufficient to give an intelligent interest in these objects of contemplation should not be the inheritance of everyone born in a civilized country."

J. S. Mill, *Utilitarianism*

"I should like, therefore, to state the problem of popular education in this way: it is the systematic training and organization of the people *to take pleasure* in active constructive work for the common good."

Kerschensteiner, *Schools of the Nation*

In a previous chapter we have discussed the function of education in general, against a background of biological and evolutionary thought: and elsewhere we shall consider the evidence available on the question of the relative influences of heredity and environment in determining the intellectual and moral characteristics of a human being. Keeping these points in mind, but including also social, ethical, and political factors, let us turn once more to the consideration of the aim of education.

Just as, in philosophy in general, members of one school of thought seek for one "good" as the end or purpose of all our actions, while others are content to say that several "goods" may co-exist and motivate our behaviour, so in education we may seek for *an* aim, or for *aims*. It will obviously be better to ask, first, what are the aims of education, and afterwards inquire whether these various

aims can be subsumed under one which includes them all.

An obvious aim of education is the passing on of the social heritage of the human race. That heritage we are too often accustomed to accept lightly as a matter of course, without reflecting on its richness and complexity. Even where it is in a visible and tangible form, as in the buildings of a great city, we are apt to confine our gratitude and our wonder to its more striking manifestations, to great works of art, and to more impressive edifices, without remarking the humbler but probably more necessary and important walls and hedges of the country-side, the tilled soil so easily destroyed by the modern builder, or the drainage system of our towns.

But these things are passed on bodily, not by education, though education is needed in their uses. Yet the same contempt bred of familiarity is to be noticed in things which most clearly *are* passed on by education and by education only, and which would disappear from the ken of man but for its influence, such as the marriage customs, the methods of farming, the organization of the humblest community, and the gift of a mother-tongue. In some of these the unorganized education achieved by merely growing up in the community serves in whole or in part, though it is noticeable even on cursory inspection that in recent centuries, and especially in recent decades, unorganized education has more and more failed to fulfil its task completely, and has needed the assistance of conscious education, often of the school as school.

In passing on this heritage, the school can be conservative or it can be progressive. It must necessarily be "con-

servative" in a certain sense, since it is conserving and handing on the wealth of the past. But if it lags behind the community it serves, and equips the recruits of civilization with the obsolete weapons of a past era, it will be failing in its duty. And, on the other hand, if it interprets "progressive" as meaning the inculcation of a contempt for the great works of the past, it will be failing in an even more serious sense. The school passes on to its pupils facts, skills, and ways of behaving, and here again it can fail by stressing one of these three too heavily to the detriment of the other factors.

It will necessarily be an aim of education to preserve order, and yet to do so without hindering change. Its easiest course in preserving the order of the society it serves is to inculcate a spirit of respect and obedience by custom, by ritual, and even by superstition. We have come in our time, however, to distrust such methods, and to base our appeal on reason and justice—in short, we have become democratic—with the hope of a better order, but undoubtedly also with the danger of a relaxation of the bonds of society. Aristotle claimed that the politician should determine the aim of education, leaving to the educator the lesser task of discovering the means and the methods. Nowadays, however, we are all politicians and all rulers, and claim our share in shaping the course of the vessel as well as labouring at an oar.

It is undoubtedly the duty of education to give some knowledge of other times and other places, of other communities, other races, other social classes. There is a Swiss proverb, "*Hinter den Bergen sind auch Leute*"—"There are other men in other valleys"—which should never be

forgotten by the teacher. The great advantage of such knowledge is, in my eyes, the increased tolerance which results, the decrease in narrow-mindedness and parochial conceit, and it has, of course, also an intellectual value. Both values were probably in the mind of Mr. H. G. Wells when he wrote, in *Mankind in the Making*: "The pressing business of the school is *to widen the range of intercourse*. It is only secondarily—so far as schooling goes —or, at any rate, subsequently, that the idea of shaping, or at least helping to shape, the expanded natural man into a citizen comes in. It is only as a subordinate necessity that the school is a vehicle for the inculcation of facts." And a similar idea was in his mind when, in another place (*The Undying Fire*), he says: "I suppose that one could define education as the lifting of minds out of blind alleys."

It is one aim of a system of education to act as a sieve, or a succession of sieves, sorting out pupils into different kinds. In its crude form this idea presents the picture of a ladder of education, up which a competing crowd start, the weaklings to be elbowed off as they endeavour to climb, especially as they try to mount certain special rungs called qualifying examinations, matriculation, graduation, first-class honours, fellowships. The qualities which lead to the top of this ladder in this picture are intelligence (especially of the academic sort) and grit, the latter sometimes partly making up for a deficiency of the former on the lower reaches of the ladder, but being unable to replace it when a certain height has been attained.

This picture is somewhat repellent. We are, of course, familiar with the classic instance of a ladder of education which Plato presented to us in the *Republic*; but it must

be remembered that there the features of the system against which most people feel a resentment were greatly ameliorated by two influences. In the first place, Plato was prepared to make everybody start absolutely from scratch, whether born of rich or poor, academic or mechanic parents (indeed, they were not to know their parents); and in the second place the ladder did not lead to luxury, wealth, or leisurely ease, but to the privilege of defending the country, living a life of ascetic brotherhood, and in the highest instance renouncing the mental studies which had led to a vision of the real truth for a return to the duties of governing and controlling the state.

Since, however, people clearly differ in their qualities and abilities, it is certain that a period of education will always be a period of sorting. The trouble about the ladder of education which we pictured two paragraphs ago is not that it selects the intellectual, but that it merely eliminates the others without providing for their further education. Probably one man has as much right to be educated at the public expense as another, and up to the same age, provided that the word "education" is interpreted widely enough. With this interpretation, the period of education would still be a sieve, but not a sieve which retained one sort and cast aside another—rather a sieve which separated two or more sorts all with the same right to further education of one kind or another.

This is a line of argument which if persisted in here would lead us too far away from the main purpose of the chapter. But before leaving it there are certain other points which deserve mention, though not development, here. It must be remembered that the further education of

certain kinds of pupils might conceivably be best carried on, not in a school but in a factory or an office, to which idea we shall return when we discuss the relationship of industry and education: and we cannot forget that certain qualities are more rare than others, and that the world is prepared, as at present constituted, to reward rarity. It is difficult, indeed, to imagine a world in which rarity will *not* be assured at least of attention and usually of reward. Yet even if we could breed men eugenically as we can breed prize cattle, we would not breed so that everybody possessed the qualities which are now rare. Mediocrity is needed, and it takes all sorts to make a world—only they must be in the proper proportions if it is to be a good world.

Is it an aim of education to inculcate right habits? Most people would, of course, answer this with an unhesitating affirmative, and, indeed, it is rather a question-begging way of putting the query, for there remains the difficulty of deciding what are *right* habits. But suppose we ask whether education is to give habits or to retain plasticity? It is curious how varying the answers to this have been, if one notes them while reading the works of great educators and psychologists.

William James wrote: "The teacher's prime concern should be to ingrain into the pupil that assortment of habits that shall be most useful to him throughout life. Education is for behaviour, and habits are the stuff of which behaviour consists". But although one commonly agrees with this wholeheartedly if one has just been reading his famous chapter on habit, especially his cheering doctrine of the way in which, silently, the right habits

form themselves when one honestly and sincerely does the day's work, yet it is clear that the same sentence could be subscribed to by those who wish to bring up a generation to follow some particular doctrine, to acquiesce in some form of government, to bow to some possibly stupid or tyrannous custom. And when one has passed beyond the primary habits, of truthfulness and the like, it is curious how soon one comes to a region where convention and prejudice hold sway.

Others have held the opposite view, that an educated man is precisely a man who has not merely a cut-and-dried set of rules and habits which help him out in most situations, but one who has retained his plasticity and judges each case on its merits, according to principles but not merely by precedent. Rousseau said: "The only habit I would teach him is the habit of forming none". Graham Wallas says: "In the Great Society the influence of men who can resist habituation, and therefore originate, is of increasing importance". And the school of Dewey and Kilpatrick, with their insistence on the flux of our times, and the impossibility, let alone the desirability, of educating for a specific job or a specific place in life, make much the same point. The education they want is an education in adaptability.

No doubt James would reply with some sentences of his well known to you, about the necessity of committing to the care of habit the minor jobs of life, just in order that one may get on with the new jobs; and the futility of spending the whole day deciding whether one will walk or tram, have bacon or fish, take sugar or not, all of which might as well be made habits once and for all, perhaps

complicated habits like fish on Fridays and bacon at other times or when on a visit. But where is one to stop with the habit-making?

Codes issued by Boards or Departments of Education, and reports of Commissions, are places where one can find set out those practical statements of the aim of education which are actually guiding the teachers and administrators of to-day.[1] The English Code says: "The purpose of the elementary school is to form and strengthen the character and to develop the intelligence of the children entrusted to it, and to make the best use of the school years available, in assisting both boys and girls, according to their different needs, to fit themselves, practically as well as intellectually, for the work of life". And it goes on to speak of doing this by training them in habits of observation and clear reasoning, arousing a living interest in the ideals and achievements of mankind, giving familiarity

[1] English and American examples are spoken of in the text. For comparison a German statement may be given. Article 148 of the *Reichsverfassung* of August 11, 1919, says: "Moral culture, ideals of citizenship, personal and vocational efficiency, must be striven for in all schools in the spirit both of the German people and of international amity and reconcilement". Of the *Grundschule* or common foundation school to which all children must be sent for the first four years, the *Reichsrichtlinien* of February 25, 1921, says: "Its aim is the gradual development of the spiritual powers out of the play and activity instincts to a moral pleasure in work expressing itself within the school community. Its unique province is the selective and formative comprehension of the spatial and spiritual homeland of the children, with especial attention to the question of the young child's powers of expression in speech, and the progressive education of eye and hand through self-activity, and through observation of nature and art in field and workshop. And *pari passu* the bodily education is to be cared for by games, gymnastics, and excursions, and, according to age and the season, by bathing, sledging, skating, and other bodily activities."

with history, power over language as an instrument, and the ability to continue their studies after their school-days. Hand and eye training are mentioned, and physical exercises; and emphasis placed on laying the foundations of conduct by example and influence. The passage is essentially practical, yet has a ring of nobility about it. And although it sets out not an aim, but the several aims, of education, it does so without any appearance of analysing a whole into separate bits. By which I mean that the English Code does not carve the aim of education into dismembered parts, but leaves the impression of a whole, even though that whole is described rather than defined.

The Americans have in recent years also given us an example of a list of the "aims" of education which is practical, though not so free from the accusation of carving up a whole. Their list is this: worthy home membership, vocation, citizenship, leisure, health, command of fundamental processes, ethical character. It was, I believe, first set up by the Commission on the Reorganization of Secondary Education, in Bulletin No. 35 of the U.S. Bureau. There is obviously no suggestion that any order of importance reigns in the list, for otherwise ethical character would hardly have come at the end; nor any claim that the items are independent or exclusive, for worthy home membership clearly requires ethical character, and vocation a command of the fundamental processes, which are presumably such matters as speech, reading, arithmetic, etc. The chief advantage over the English Code preamble is the advertising advantage of being short and easily quotable from memory, which has resulted in the American list being far more widely known

in America than is the English statement in England. In nobility of statement the English clearly have the advantage. An earlier American statement of aim was in this respect (indeed, in my opinion in every respect) better. Thorndike, in the *Principles of Teaching*, says: "These aims of education in general—good will to men, useful and happy lives, and noble enjoyment—are the ultimate aims of school education in particular. Its proximate aims are to give boys and girls health in body and mind, information about the world of nature and men, worthy interests in knowledge and action, a multitude of habits of thought, feeling, and behaviour, and ideals of efficiency, honour, duty, love, and service. . . . The school must prepare for efficiency in the serious business of life as well as for the refined enjoyment of its leisure. . . . The ideal of the scholar has given way to the ideal of the capable man —capable in scholarship still, but also capable in physique and in the power to manipulate things. And very recently thinkers about education have dwelt more and more upon the importance of aiming . . . also to adapt (children) to the life of childhood itself."

Both these American paragraphs, especially perhaps the shorter, remind us of Herbert Spencer and his essay on "what knowledge is of most worth". How to live, he says, that is the essential question for all of us. And then he sets down the art of living in a series of activities, each of which is indispensable before it is possible to carry on those activities which come later in the list: self-preservation, obtaining the necessaries of life, rearing and disciplining offspring, maintaining proper social and political relations, and filling up the leisure part of life which

remains with a miscellaneous crowd of activities. We will not follow him in the arguments by means of which he then shows that the knowledge most conducive to success in each of these departments of living is science. We must yield to his logic in admitting that he has undoubtedly analysed life into a series of activities in the order of their necessity. We need not, however, confess that what is most *necessary* is, except in a sense which makes the words identical, the most *important*. Almost certainly Spencer himself would have agreed to the distinction. In necessity, training in self-preservation comes first. In importance, many have held that the list should be reversed, and leisure placed before earning a livelihood.

For example, Aristotle thought so. The end or purpose of war is peace, and the end or purpose of work is leisure. War and work are means to their ends of peace and leisure. The end is more important than the means, though the latter may be essential to the former.

This brings us back to the question with which we started. Is there any one end to which all other proximate ends are handmaidens? It is a question which can only be answered according to one's general philosophy of life. Education, like everything else, must subserve the highest good, and our question really becomes the general question of moral philosophy—what is the highest good? Is it morality, or sacrifice, or pleasure, or happiness, or truth, or beauty, or knowledge, or abstract thought, or virtue, or conformity to nature? Each of these has been set on the highest pedestal by some ethical thinker or other. For our purposes as educators, there would seem to have been at all times two main schools of ethical thought, now the one

and now the other being predominant. The one school, Epicurean or Utilitarian, or whatever it may have been called, has always placed pleasure in some form or other in the position of the highest good; the other, Stoic or Puritan or whatever its name, has, on the contrary, pointed to self-denial and duty.

Now at first sight there would seem to be no difficulty whatever in saying which of these is the ideal to be aimed at in education. Duty or self-indulgence? Self or service? as a modern movement has it. There can be no doubt which is the higher, and certainly in our own actions, and in our teachings to those under our influence, we will turn to duty. But since we are trying to be philosophical, and to get to the very bottom of things, let us ask why self-denial, or duty, or any of the sterner virtues, are virtues at all. And let us ask whether, when we obey a call of duty, we do not do so because we would be miserable if we didn't—that is, because of the comparative pleasure of acting according to duty.

Take the last point first. It raises the question of what we mean by pleasure, and how we decide that a thing is pleasant. Commonly we reply that we just know a thing to be pleasant. Pleasure is a name for a state of mind which we recognize when we experience it. The argument contained in the last sentence of the last paragraph, however, defines a pleasant action as one which we choose to perform, since, it is said, we would not otherwise choose it. It may be an action which most people, and we ourselves at another time, would call unpleasant. But by comparison with the alternative of neglecting our duty, and suffering punishment or the pangs of remorse, it is at the moment

comparatively pleasant, i.e. less unpleasant than the alternative. This is a line of thought which would reconcile the two apparent opposites. And definitions of education have been made based on such a reconciliation. For example, Aristotle wrote: "It is pleasure that makes us do what is bad, and pain that makes us abstain from what is right. That is why we require to be trained from our earliest youth, as Plato has it, to feel pleasure and pain at the right things. True education is just that." [1]

But, you will notice, this does not tell us what are the right things. We have just seen that education can change the things at which we feel pleasure. What things ought it to select for this? Duty, reply the sterner sort. Which brings us to the former of the two questions we asked—viz. why is duty a virtue?

To this some reply, that we know our duty, we know what we ought to do, just as intuitively as we recognize pleasure when we are experiencing it. But the utilitarians have another answer. That is our duty which, in the long run, increases the sum-total of happiness in the universe. And by so saying, they preserve the unity of their system, and avoid making any more claims on a somewhat mysterious intuition than the one of knowing pleasure when it is met with.

The pleasure doctrine has by this time, however, passed beyond selfishness and become the purest altruism, even if it accepts the idea that, with a proper education, altruism produces more pleasure, more true pleasure, than selfishness. For we act altruistically because we believe that by so doing we are adding on the whole to the sum-

[1] Ethics, Book II, Burnet's *Aristotle on Education*, p. 49.

total of human pleasure, and, in addition, avoiding the misery which we, either here or hereafter, would experience if we acted otherwise. And if you reply that we are therefore, after all, acting selfishly, there is the reply that we are acting both selfishly and altruistically; whereas what the world calls selfishness is action which brings pleasure, or is, perhaps mistakenly, expected to bring pleasure, *at the expense of others*.

Could an action possibly be a good action, if it could not bring pleasure to anyone at any time? True, in any individual action, we cannot be sure that it will do so. But we ought to act, says the utilitarian, in that way which, on the balance of probabilities, seems to us most likely to increase the sum-total of pleasure. And an action may be worth while, in the matter of adding to pleasure, even if it in itself on this particular occasion fails to do so, and even if it clearly from the first is destined to fail to do so, provided that it is an action which in the majority of cases will add to total pleasure. For it may be worth while to avoid breaking the law that this kind of action should be performed, so that in the long run the race may benefit, just as a reflex defence action of an insect may lead to the destruction of the individual, and on any particular occasion may do no good at all, but be worth while for the species in the long run.

Except once, I think, I have in the preceding paragraphs invariably used the word "pleasure" and not its synonym "happiness". Happiness is not, of course, in ordinary language exactly synonymous with pleasure. It suggests a more placid and less passionate experience. But the utilitarians, as I read them, always mean the same by the

two words. Counsel on the utilitarian side would naturally use happiness, because it avoids one argument of the other side, which takes the form of accusing the utilitarians of being pleasure-seekers. And some, especially of the earlier utilitarians, did not admit that there was any difference of "goodness" in different kinds of pleasure, such as would be intended if we made a distinction between happiness and mere pleasure, in which distinction we would be placing happiness higher in a scale of goodness.

To avoid the argument that a large number of people enjoying some sensual pleasure would, by the utilitarian argument, be preferred to a few people enjoying what most of us think are the higher pleasures of the mind, John Stuart Mill and the later members of the school admitted a hierarchy of pleasures, a little of one kind of pleasure outweighing a larger quantity of another. It is usually said that the utilitarians, while thus making their case less repugnant to the man in the street, have given it away by admitting an order of merit in pleasures, since these pleasures must be thus ordered according to some principle, and that principle is thereby confessed to be a higher "good" than pleasure. But, at least in John Stuart Mill's case, this does not seem to me to be a true accusation. For he does give, as the criterion by which we are to know the higher pleasure, exactly the same test as that by which we know pleasure at all, namely preference; we prefer pleasure to pain, and we prefer the higher pleasure to the lower. True, he adds to this test the requirement that the person whose judgment is being thus used to discriminate the higher from the lower pleasure must be

one who is capable of experiencing both the pleasures in question. A pig does not, in this sense, prefer wallowing in his sty to hearing a noble drama, for he cannot experience the pleasure of the latter; whereas Socrates can be said to prefer the drama, for he can experience both. Now if we have once admitted that pleasure can be distinguished from and preferred to pain, and that the proper end of action is to increase the quantity of the former and decrease the quantity of the latter, it would appear that the same method can be employed, without any further principle being involved, to distinguish grades of pleasure or of pain.

It is, of course, true that even after we have arranged pleasures in order of preference—that is (by definition), in order of pleasantness—we have not said how much of a higher pleasure is equal to how much of a lower. We have ordered in magnitude, but not measured, our pleasures. Presumably here again the sole criterion would be preference. Every man has his price, the saying goes, which, being interpreted, means, in terms of our present discourse, that for every man there is some offer of a large amount of some lower pleasure which will induce him to forgo some smaller amount of a higher pleasure, usually, in the circumstances to which we apply the saying, a higher pleasure associated with what we commonly call doing our duty, or sacrificing ourselves to others.

But note carefully that utilitarianism does not say that every man should accept that larger amount of lower pleasure. Or does it say so? It is in a dilemma, which it is worth while to set out clearly. There were, let us recall, two sides to the incentives which might impel a man to

do something which was not, in ordinary parlance, to his own advantage. The one side, the one way of looking at the matter, is to say that his proper course is so to act (even if unhappiness results in his own case) that the total happiness of the world is magnified. The other side, the other way or an additional way of looking at the matter, is to say that when once he has appreciated the last point, he could not act otherwise, because by this act of apparent self-negation he will, in fact, receive a pleasure of such high quality as to outweigh the lack of the lower pleasure which he has denied himself, or the outward misery which he has accepted. Or, to put it in yet another way, by so acting he has, in fact, asserted that this action is indeed the most pleasant for him. The dilemma lies in this, that utilitarianism has been, at any rate in my exposition of it, so insistent that the only standard is preference, that it cannot well defeat the last argument, but is committed to the doctrine that even altruism is only a noble form of selfishness.

Then does this simply mean that we are all to do as we like all the time? And if so, what is the nobility of that, and what education is needed to teach people to act thus? it may well be asked. Well, it does, I think, mean, in a certain sense, doing what we like all the time. But education means an influence which the older members of the community bring to bear on the younger, to lead them to what the older members have discovered to be higher pleasures, which, when discovered, they also will prefer. This is very like what Aristotle said, if, indeed, it be not identical with it. The difference between our present statement of it and our former quotation from Aristotle is

this, that there it seemed as though "the right things" were something higher than pleasure and pain; whereas here we have come to a point where we see that a right action is one which brings the greatest pleasure to most, by which we understand an action which would be preferred by the weighted votes of all—weighted in proportion to the amount and grade of pleasure they received: and true education will bring the individual so to appreciate this that he will himself obtain the greatest pleasure from this very same action.

All this, however, while satisfying to one's desire to make things hang together and to subsume everything under one principle, is not very useful in planning the details of education. In actual situations, doing one's duty does not always seem like choosing the most pleasant thing. Usually it takes the form of forgoing an immediate satisfaction for a more remote and less certain one. Moreover, since it is certain that all men are not alike, and that there are some who cannot rise as high as Socrates, even though they rise much higher than the pig, it follows that there will always be some men who can never experience these higher pleasures, or some of these higher pleasures, which (they are told) are so much more worth while *could* they only experience them. It is conceivable that there are men who cannot feel the pleasure of self-sacrifice for another's good; and whether this is so or not, it is certain that there are differences in men in this respect, and that not all can feel it in the same degree. Are we to expect the same duty of the pig as of Socrates? Assuredly not; and so we cannot expect the same duty of all men. *Noblesse oblige* is the finer side of this doctrine, but its shadier side

is the danger that each may put himself off with the excuse that this or that conduct is not to be expected of him, though it may be of others.

And so it comes that in actual practice what we demand of men is duty. We require a man to put others before himself, not because we promise him pleasure as a result (though most religions do in fact promise such pleasure, at least in the next world), but because, as we say, he ought to do so. We will not split hairs longer on debating whether, when we have persuaded or trained or frightened or habituated him into self-sacrifice or other duty, we have therefore made it more pleasant for him. If we define the pleasant as what is actually chosen it is, of course, so. But in the plain man's meaning of pleasant, it is not so, and to the plain man education in character means training in moderation, in giving up pleasures that others may enjoy them, without any emphasis on the idea that both moderation and renunciation may actually enhance pleasure.

Most things become clearer if considered genetically, and it may be worth while to look at the present problem from the point of view of its history, especially its biological history. The lower pleasures are the older pleasures. They are the pleasures which we still enjoyed when yet we were beasts. They are very naturally more stable, being more deeply ingrained.

The higher pleasures are later developments. They have not ousted the lower pleasures, but are built on them, requiring the possibility of these lower pleasures to make their own existence possible. The higher pleasure of renunciation can only exist if there is some lower

pleasure to renounce. And clearly these higher pleasures will be less stable than the lower, like water running in a channel at a higher level, and a channel somewhat flimsily constructed compared with the lower bed of the river, worn for æons in the solid rock. Education is like the work of the engineer who diverts the flow to this higher level, trusting partly that it will there wear itself paths sufficiently deep to be permanent, trusting partly to constant repair of the artificial banks, and trusting partly to constant replenishing of the water supply at the higher level by pumping from below, with the aid of energy provided by the strong flow of that lower current: for although water will not flow uphill, a river stream can be used to turn machinery to pump *some* of itself uphill.

CHAPTER V

JOHN DEWEY

"When the environment is so arranged, that childish activity can itself find the track of the useful and spend itself thereon, then government is most successful."

HERBART, *Science of Education* (Felkin's translation), Book I, chap. 1

"He must not give precepts; he must let the scholar find them out for himself."

ROUSSEAU, *Emile*, Book I

"To excite the self-activity of the pupil in a suitable province is the *chef-d'œuvre* of the teacher's art. . . . Knowledge comes . . . as a by-product and inevitable consequence."

FICHTE, *Addresses to the German Nation*

THERE is, however, one modern school of thought whose opinions on the aim of education are fundamentally different from anything expressed in the preceding chapter: the school founded by Professor Dewey, of Columbia University, New York, and formerly of Chicago University. His published views on education are most easily accessible, for readers living in Great Britain, in the two small volumes of his essays edited by Findlay, and in his larger work, *Democracy and Education*. But a student of the movement of which he is the leader ought also to examine his more general philosophical position, for which purpose his *Reconstruction in Philosophy* is perhaps most to be recommended. His influence on the schools of America has been enormous, and, I am told, on educational movements in the Far East and in Russia. There is a movement in Germany which in many respects is based on the same fundamental philosophy, but which

is only partly, I think, due to the direct influence of Dewey, being in the main an independent growth. In Great Britain, except in Scotland, which is always in closer communication than England with America, I have been repeatedly struck by the absence of references to Dewey's ideas and sometimes by evidence of complete ignorance of them, although the same views in other dress are often mentioned in their practical aspect.

I speak with great diffidence whenever I come to discuss technical philosophical matters: but it seems necessary to say something of Dewey's general philosophy in order to fit into place his educational doctrines. In the first place, then, he is a pragmatist: that is to say, he tests everything, including any idea or hypothesis or faith or religion, by the way it works, by the consequences. This may appear a very ordinary procedure, and one which most of us adopt. But in philosophy it is set over against a very different procedure, which, according to the pragmatists, vitiates the thinking of their predecessors, namely the custom of testing ideas, etc., by their accordance with certain general notions or principles, often accepted on the authority of others, as Aristotle or the Church, or some other person or body enjoying prestige in this matter. In natural science pragmatism began when Galileo questioned Aristotle's statement that heavy bodies fell more quickly than lighter bodies, and proceeded to drop two contrasting bodies from the Leaning Tower of Pisa. (In defence of Aristotle's memory one ought to add that he, had he been alive, would undoubtedly have been very interested in the experiment, and would have agreed with Galileo. It was

rather the Aristoteleans than Aristotle who were Galileo's opponents.)

But although pragmatism began long enough ago in natural science, it has been slow in coming into its own in mental and moral study. There authoritarianism still reigns unsuspected and unchallenged in many quarters. This is obviously because it is not so easy in morals to test doctrines by clear-cut experiments as it is in the case of physics. Dewey wishes to bring into this realm of discourse the same healthy appeal to consequences as has worked such wonders in natural science.

One might proceed to apply Dewey's pragmatic test to the greatest happiness doctrine of the utilitarians, which was discussed in the last chapter, and in its support point to the humanitarian results with which it must, at least in part, be credited in the nineteenth century. This Dewey admits, and, indeed, he considers utilitarianism as the best of the transition doctrines between the classic philosophies and pragmatism. But he finds also consequences on the debit side of the utilitarian account. By its emphasis on pleasure it fitted in only too well with the race for worldly goods which the free competition and industrial inventions of that century encouraged, thus covering up the evils of capitalism as well as aiding the "goods" of humanitarianism. But its chief fault in Dewey's eyes is that it still holds to a *summum bonum*, pleasure or happiness: he will have nothing to do with a principal end or aim which savours in his opinion of tyranny, of authoritarianism. He will not even admit a small number of aims or "goods", but insists that every specific situation must be considered for itself, the specific

viel which is found in it attacked, and the worth of the adopted procedure gauged by the particular consequence in this particular case. To the plain man who takes what Dewey says as meaning just what he says, this seems very like living from hand to mouth, very like deciding, at each fork of the road, which appears to be the best road at that point, without having any definite wish to go, in the long run, north or south. The trouble about deciding cases on their merits is that one finds that one has let oneself in for a good deal more than one realized at the time. Mr. Dick acted as Dewey advises when Aunt Betsy asked him what on earth she ought to do about little David Copperfield. "Bath him", he said, diagnosing very accurately the main evil in the situation—dirt. And no doubt the bath removed the dirt and was justified by the consequences. But by acting on his advice Aunt Betsy was, in fact, deciding David's career and the tenor of her own life for a number of years, since it was certain that she would not cut him adrift when once she had taken him in and bathed him. I for one cannot for the life of me see how one can talk of a specific good in each specific situation unless some general idea, or, at least, some few ideas, of what things are good can be appealed to. However, I am quite prepared to admit that it is extremely important to apply such principles as one possesses *to the particular case*, and be always ready to observe whether this particular case does not cause one to change in some measure those principles. I imagine that Dewey's objection is at bottom an objection to the high and mighty theorist, who knows so well what "good" is that he will not admit any difficulty in the particular

case. Dewey has no patience with principles which are unassailable, unimprovable, which, instead of aiding inquiry, close inquiry. And so far one can agree.

It is, I suppose, correct to say that Dewey's chief belief and incentive is his democracy, by which I mean his belief in equality of opportunity among mankind, fullest development of every individual, avoidance of classes which do not mix and interpenetrate, and a free voice for all in the government of all. It is because he objects to classes among mankind that he objects to those philosophies which create a truly real world of ideas in distinction to the phenomenal world in which we live and eat and drink and hew wood and carry water. For that so-called real world (which the plain man would call the imaginary world) tends to become the property of the leisured class, who leave the other phenomenal world to the craftsman, the artisan, and the slave. He is in this essentially not a Platonist: he would strenuously object to the figure of the cave, with its comparison of the things of this world—this sensuous world—to shadows, while the truly real objects are inaccessible to sense, are "ideas" which only someone with long philosophical training can take note of.

Man's primitive life was a life with periods of vigorous and exciting adventure, separated by stretches of boredom, during which memories of the war-path and the chase were welcome, and the more welcome the more they were of agreeable incidents of victory and success. Early memory, therefore, did not so much need to be accurate as pleasing. It became myth and tradition, and later, religion and ceremony: and formed an explanation,

gratifying to the participants, of the existence and course of the universe.

Simultaneously, however, there grew up a body of other memories and knowledge, lagging behind the former, but overtaking it as time went on, a body of knowledge of how things behaved if this or that were done to them; arts and crafts, handwork and manual tasks. These were the job of the women or the slaves, and therefore of less social distinction. The mythological knowledge was the aristocratic knowledge, and its possessors disdained the lowlier wisdom. Their own occupations were less susceptible of being reduced to tested rules—occupations of war, the chase, the sea. *There* chance and the Gods ruled, not man. But in the course of time discrepancies between tested knowledge and traditional knowledge became too numerous to be ignored by the practical, and too troublesome to the minds of the intellectually honest. To reconcile these two bodies of knowledge was the task of philosophy, and, if I read him aright, Dewey is of opinion that it was from the start a useless, improper, and thankless task. His thesis, indeed, is, or so it seems to me, that philosophy ought to make no attempt to save the face of the traditional wisdom, but ought to base its work entirely on experimental scientific fact.

One of his educational doctrines arises from this point of view, for it is clear that with such opinions he will not look upon the school as a place where traditional knowledge is inculcated as authoritative and proper to be known, but as a place where experiments in life will be carried on and where other experiments in life will

be read about and told about because of their results, by which they will be judged, and not by their prestige or conventional importance. School is to be a reflection of the larger society outside its walls, in which life can be learned by living. But it is to be a purified, simplified, and better balanced society, for the actual surroundings of the school may well be ignoble, are in these days of a complex civilization almost certain to be too complex for the understanding of the child, and in these times of specialization likely to represent only certain aspects of life, as, for instance, only rural life, or only the life of a mining village. Throughout his philosophy, Dewey objects to any separation of life into discrete parts, and so in education he objects to a division between a body of school knowledge, on the one hand, and outside life, on the other.

Early philosophy, confronted with its task of reconciling the tested knowledge of the craftsman and primitive scientist with the authoritative assertions of tradition, and of making this reconciliation in a way pleasing to the aristocratic wielder of tradition, unfortunately fell to the temptation to pander to the latter (so runs Dewey's argument), and sought for some doctrine which would be equally authoritative, instead of humbly following the lead of the experimenter, and accepting a conception of truth which would leave truth ever in the making and never completely known. Truth was conceived of as something knowable in its completeness, and something, therefore, which was fixed, static, unchangeable. It was found in the realm of "ideas" or universals, which were free from the chances and changes of this mortal world—

were immutable, complete, perfect. The statements of him who could breathe the thin air of this land of ideas were as authoritative as those of any priest or prophet of the old tradition. The rapidly increasing knowledge of craftsman and scientist was discredited, or at least very much limited in its application, for it dealt only with certain rather petty changes in the appearance of objects, whereas true wisdom, operating in the land of "ideas", dealt with unchanging truth. And so the old divorce into two classes was continued, and, indeed, made deeper. Education came to mean such instruction as would lead up to "true" knowledge, while to a meaner kind of thing, apprenticeship, was left that practice in handling base matter which was required of the mechanic. The seeds were planted of the tree of controversy between materialism and idealism, and anything savouring of materialism found it difficult or impossible to obtain entry to school.

Thus life was divided into two—one part cared for in the school; the other in the workshop or on the farm. This latter had the advantage that its tasks were warm and coloured with the atmosphere of real life. They were obviously necessary tasks, and the co-operation of the young was obviously necessary in them, not because the young had to be educated in the work, but because their aid and help, little as it was, could be seen to be required. The work fitted into life, was in no sense artificial, had clear and natural incentives, and brought equally clear rewards; incentives and rewards which belonged to the job, and were not extraneous things. Character was trained by participation in them, co-operation was practised, and

solidarity of communal understanding resulted: or would have resulted had it not been for the other kind of education, school education.

There, in school, the tasks were not at all obviously necessary. The work was individual and competitive, co-operation was a sin. Incentives to attack such uncongenial tasks had to be supplied from outside, and the rewards were separate things, in no sense immanent in the jobs themselves. Prizes had to be *labelled* "Prize for such and such a subject", there was no obvious connection between prize and subject. The whole affair was artificial. As long as the life outside remained simple and understandable, and could be participated in by the children when not at school, participated in in a real and necessary way, no great harm was done to character by the artificiality of school with its training in looking for extraneous rewards and fearing external punishments, in lieu of work for its own sake, its own obviously necessary sake.

But when the nineteenth century, and still more the twentieth century, brought such a complication of life that children could no longer understand it, and, indeed, many adults also failed to do so: when the tasks carried out by the adults were such things as going to the factory when the whistle blew, and putting eyelets into buttoned boots, or something equally petty and even more mysterious in its connection with life as a whole, then the outside school life ceased to give the necessary education in character, in social solidarity, in the need of co-operation (which, in the form of the division of labour, had minced itself into mechanical subordination). Learn-

ing by participation became impossible, and even if possible would have meant learning merely to fill a narrow niche in the factory, instead of learning a large slice of life. And so two new tasks came to the school: one of which Dewey emphasizes very strongly, while his followers, especially Kilpatrick, do so, if possible, even more markedly; the other he is comparatively silent about. The two tasks are those of supplying that training in character which life in a simple community gave, and supplying that training in the technique of a craft which the small master-workman could so well give, but which the "hand" in a factory cannot. The latter point we may leave to the chapter in which the connection of industry and education is discussed, the former we have already spoken of in Chapter II, on the *Factors in Education, and the Special Function of the School.* We turn here rather to that form of the same argument which concerns *method* in school, which emphasizes not so much the loss in character training as the loss of natural incentive in the classroom.

It is especially that artificiality of interest which reigns in so many schoolrooms that the teacher who is a convinced Deweyite tries to combat. Lots of teachers have done so before Dewey taught, and other thinkers on education have taught much the same doctrine—for example, Rousseau in the *Emile*—but no one has a greater influence in this direction in the present decade. School tasks are to be made as real, as obviously necessary, as naturally self-rewarding, as the tasks of real life. A critic may object that many of the latter are imposed upon unwilling and passive toilers, and bear no connection with the pleasures

and pains which those workers enjoy and suffer, except a connection as artificial as that of schoolwork with the prize-book or the birch. But that is only to say that life outside school also is in need of reform in many many places. The life Dewey means is especially the life of the man working sincerely and with pleasure for his family at tasks which are naturally connected with their well-being, the life, for example, of the Swiss Family Robinson (which was written to exemplify Rousseau's doctrines), or the life of a schoolboy on holiday in a country or seaside place, where he has to bring in the cows, or row to the post, or has lots of interesting natural occupations to amuse him when he is not doing chores.

The general idea of this method, then, is that school time shall be filled with real tasks which the pupils themselves genuinely wish to carry out, which, if possible, they have themselves suggested, and which will involve the acquisition as a by-product of the formal school subjects, such as reading, arithmetic, a modern language, and the rest. The age-old antagonism of "interest" and "effort" in the school is to be resolved by enlisting interest to lead to effort in the right direction. It is another example of Dewey's dislike of dual and opposed ideas, and his belief that where such are found, they are unreal and the creation of some wrong way of thinking and analysing the original whole situation. In the present instance, those who look only at the one side of the shield call the pupils of the "interest" school pleasure-seeking butterflies, flitting from flower to flower with no abiding purpose, and never learning the lesson so needed in after-life of perseverance with an unpleasant

task. Those who see the other side of the shield retort that the former school, the school of "effort", teaches its pupils only to dislike studies, to give to them that minimum attention which avoids serious punishment, and for the rest to take refuge in interesting occupations outside the teacher's ken.

Before discussing this farther in general terms, it will be as well to give some examples of what these "projects" are like, which are to replace the separate school subjects in the curriculum. First, let us take some at random from the American literature on the Project Method. A class is making preparations for the breaking-up party on the last day before the Christmas holidays, and spends all its money before the candles for the tree are remembered. Can we not make them ourselves? Didn't the Swiss Family Robinson make their own candles? From another pupil the remark that he has read in a book of how the pioneers of the log-cabin days made their candles. A general search in the available books for information on candle-making, the most practical account being that of the log-cabin book. The candles are successfully made, and, one thing leading to another, an interest in the log-cabin furnishings in general follows, and a miniature log-cabin is made and fitted out by the class, in the course of which pursuit they learn about the proper kind of wood that was available, read about the westward movement, imagine their cabin to be at a certain definite place, and make the story, with map, of how the family trekked thither, and so on, learning their history, geography, and nature study incidentally as they go, and all the while being *keen*.

"Who lives in the West Indies?" asks a pupil in another class. Search reveals that there is no book in the class library which tells this. The teacher suggests that they write to the steamship companies to see if their advertising matter is helpful. A committee is appointed to find out the appropriate steamer company. Each writes a letter, and a class meeting decides which is the best one to post. And so on.

Another example from personal experience as parent of a six-year-old attending an American school. Somehow the question arises of how Manhattan Island, with its teeming population and no visible means of support, manages to get fed. Where does its food come from?—how does it get here? The teacher tells them the name of the chief market, and the class again, in this instance, write letters asking permission to come and have it explained to them, the best one being again chosen and posted. The answer is favourable, and on the appointed day, with 20 cents each for Subway and Elevated and return, the children and their teacher set out and are shown marvellous refrigerators full of food, some freezing, some only cool. They see refrigerator trains arrive from Florida and from California. They are shown maps of the other markets of Manhattan, and I do not know what else. They talk of nothing else when they come home, and for some weeks the resulting discussions on the various loads they saw on the trains fill the school day. They make portfolios each about the business. My boy specialized in making maps of Manhattan, showing the markets and connecting-lines for each of the portfolios. Children who had lived in the pig country, or the

corn country, described the farming there, reading it up to supplement their own recollections.

From pre-Dewey literature one can collect lots of projects also. *Emile* is, of course, full of them. Sandford and Merton lived on them. Professor Henry Armstrong's heuristic method was a project method, differing only in being confined rather to the discovery of generalizations, mainly in science, whereas the project is meant to lead not only to discovery, but to the acquisition of skills and habits. The long and involved series of investigations which his children and their playmates carried out on the density of water, fresh and otherwise, on the principle of Archimedes, involving incidentally the discovery of how to find the area of a circle, and other interesting matters, arose, you may remember, from the story of the *Monkey which would not be Killed*, which its owner on one occasion threw into a pond with a stone tied round its neck. The stone was too heavy for it to lift on land, but at the bottom of the pond it lifted it easily enough, and, holding its breath, walked ashore! "Is that possible, father? Are stones really lighter under the water?" Answer: "Well, you can weigh, and here are scales. Suppose you find out", which started off the whole series, the twist into the question of density coming when the family removed to the seashore and the children wished to repeat their experiments for the benefit of new friends with seawater.

Most of us can remember projects from our own past, which in our day were usually ignored or even frowned upon by school, though not always. I was, for example, a *Boy's Own Paper* reader, and made a map of Robinson

Crusoe's island for the editor of that admirable publication which led me to read that classic much more carefully than before, and, indeed, much more carefully than anyone I have since met, unless it be my son. There was, it is true, an extraneous prize for that competition, but I did not win it, so that my memory of the joy of the performance is not due to that, but to the inside pleasure, the intrinsic interest of the job. And I recall another experience which partook of all the properties of a project, and in recurrent episodes covered several years of my life. We had a grandfather clock, which, when I was a schoolboy of twelve or so, ceased to go. Fired by some articles on clockwork in an encyclopædia, I took it to pieces to some extent, making drawings as I went, cleaned it, and put it together, when I proudly called the family to see it, and only discovered a minute or so later that it was going backward. That, however, was easily rectified.

It was from this clock that I acquired an interest in the simple pendulum, learned that it swung more slowly as its length increased, and read in the encyclopædia of pendula which had cunning arrangements to prevent alteration of length with change of temperature. So, when at the house of a chum I was introduced to a pendulum clock which needed correction, I was ready to teach anyone how to do it, and was extremely surprised when it was discovered by trial that *this* pendulum went quicker when we made it longer! Further investigation showed a second bob, above the point of suspension, which we had at first not seen, and we learned for ourselves that such a pendulum has quite remarkable

properties as regards the connection of length and time of swing.

And so, when I entered a physics laboratory several years later again, I was immediately interested in a large pendulum with two bobs, one below and one above the point of support; and my first scientific publication, not of any particular importance, but still original, was a paper on a method of adjusting the Kater Pendulum, as it is called. Here was a line of interest, arising exactly as is contemplated in the Project Method, running through several years of my life, and providing the incentive to work of an academic nature which was part of the regular school or college curriculum.

In a famous English public school, in which last century projects were certainly frowned upon despite its reforming head master—at any rate, projects which involved bird-nesting or keeping ravens, as we know from the most famous of school stories—there occurred in the year of the Pasteur centenary an ideal example of a project. One group of boys was set by the science master the job of reading up Pasteur's famous experiments, and to recount to the others such of them as could be shown, as, for example, his famous racemic acid discovery of the connection between crystallization and the polarization of light. There were many articles about him in magazines during that year, and an excellent Life appeared in French, which was read in that language. Thus not only chemical knowledge received its incentive from the general project, but the latter slopped over into the modern language department, which played the play *Pasteur* in French: and in the art department the boy who painted the back-

cloth for that play won the term art prize for it. The whole thing, as it has been related to me, was exactly what Kilpatrick, Dewey's most eloquent disciple, calls a project.

The annual concert in the old-fashioned Board-school, when money was raised to buy a new piano or to swell the boot fund, was a project which supplied the incentive for weeks for the work in music, in needlework—in making the costumes—and in learning recitations, etc. It was rather an artificial project, and besides, it did not bring in any of the stiffer school-work, and was grumbled at by masters with backward children to bring up to the mark in sums or spelling, but it induced a lot of hard effort for the sake of the interest involved. In a more intentional way what is called "auditorium work" is often used in present-day American schools to supply incentive and form projects. A class has the job of entertaining and instructing the rest of the school in an auditorium period, say with a cross-section of its own school-day, telling what work it is doing in history or geometry or what not: or staging a playlet to encourage a freer use of the library, in which a child librarian tells the school of the wonderful books that can be found on its shelves, and takes down from a shelf of living books (children *dressed up*, which they love, as David Copperfield or Midshipman Easy or Mowgli or Alice or Rob Roy) copies which tell part of their own story to the school. In the preparation of such jobs lots of work which at other times would be called grind and swot is done without any feeling that it is anything of the sort.

Besides, do we not all see boys, and, I suppose, girls,

carrying on their own projects and doing in connection with them things which for effort and intellectual level surpass anything they are asked to do at school?—at any rate, in these days, since the writers of children's papers have become so acutely aware of the energy which can thus be tapped. Watch a boy of eleven making an epicyclic clutch with his Meccano set or reading about the Flettner rudder, and ask yourself whether, as his science or mathematics master at school, you would dare to give him anything one-quarter as hard to do. Some science masters have used the hint, and begun their mechanics with a motor-bicycle.

Yet there is another side to the matter. It is true that most of the opposition to a project method comes simply from inertia and being old-fashioned, and from the undue influence of examinations. But a little self-questioning will show us also some real difficulties. The most fundamental criticism, to my mind, is my own experience, which is, I am certain, general, that there are many skills and intellectual processes which I only possess because I was put through a course in them, and many others which I do not possess in spite of there being many incentives in the projects of my life to encourage me to acquire them. Like most people, I recognize that much even of my academic education has been acquired out of school, when I was, I thought, playing. But I have grave doubts whether play would have brought me to master Bessel's Functions, or differential equations.

It is true that a project, the desire to understand the statistical side of experimental psychology, has caused me to acquire a good working knowledge of the theory of

probability, a part of mathematics on which I never heard lectures or received formal instruction. But, on the other hand, I know others who with the same incentive, but lacking my preliminary mathematical training, have not done so, though they have expressed the desire. And in this very sphere it happens that I would tremendously increase my own power of manipulation if I would only take the trouble to master the modern work on determinants; but I keep on letting other matters prevent me. I may and do excuse myself by the plea that there really are very many other matters which it is my duty to attend to first: and it may be that in an older man there is a sort of conceit which prevents him from, as it were, beginning at the elementary parts of a subject again, going to school again, which would not be operative with a youth or a boy. But in part I believe it is because one needs in its proper place the regular course; and incidental learning, though most important, is not enough.

This last page must not be read as implying that I am not a believer in the principles underlying the project method. I most emphatically do believe in them, and if I had to choose between a regular course of instruction without immediate spontaneous natural incentives and incidental learning with such advantages, I would not have the slightest hesitation in plumping for the latter. All I am saying is that a judicious mixture of regular drilling with incidental learning is probably best, that mixture of "mastery" periods with "expression" periods which is spoken of elsewhere, and has been preached so effectively by Washburne of Winnetka. A man's best work is done as play, and a boy's, too: but both the man

and the boy need and welcome opportunities for being definitely taught and drilled in the weapons necessary to prosecute their playtime occupations. The commonest fault in the successful school which is proud of its many examination results is that everything is apt to be teaching and drill, and examination results, necessary as they are, are not worth the loss of adventure and joy. The really clever schoolmaster is he who can cunningly use the one to help the other. Do you remember Beetle's private reading, in that Stalky incident which comes into *Debits and Credits*, and how he used it to bamboozle the external examiner, whose pet hobby was the Bacon-Shakespeare controversy? Luckily the Reverend John was always there to prevent too great a split between effort and interest. And it was the head, who seems not only to have been a gallant sahib but a good teacher (though terribly enslaved by the army examinations), who gave Beetle his chance by throwing open his library.

. . . . .

I fear that the Project Method, preached by Kilpatrick and other followers of Dewey, has usurped a larger part of this chapter than it was entitled to, if a fair picture of Dewey's educational philosophy was to have been given. As some antidote, let me recapitulate. In the last chapter I urged the utilitarian doctrine of happiness as the ultimate end of life and therefore of education. This chapter I began by reminding myself and my readers that Dewey, though sympathetic to the happiness doctrine, objects to it as to all ends and aims which are fixed in advance, and holds a theory which makes both truth and

goodness relative and always in process of discovery and creation, not perfect ideals already known in theory, and determining practice. He is content with a temporary goal which decides the next step only, and after that step he reconsiders the goal. He objects, therefore, to all authoritarianism in school, and to a body of authoritative knowledge which is to be taught by the school. The school, like the world, must be experimental, testing its results one by one as they are obtained, and retaining or ruthlessly rejecting according to the result. Especially Dewey is democratic, and his objection to any divorce between thinking and doing is not only psychological in origin, but philosophical, inasmuch as he sees a parallel with the division of society into aristocratic and mechanic. His school must be a doing school, and *therefore* a thinking school. To the divorce of thinking from doing also he traces the departure of true interest from so much of schoolwork. In the out-of-school occupations of children he finds the keenest interest and tremendous effort. He does not find there that effort and interest are opposed or separable, and he wants them recombined in schoolwork. Hence the Project Method of his followers, of which enough, if not too much, has been said in the body of this chapter.

CHAPTER VI

EDUCATION AND FREE WILL

"The new education, on the contrary, would have to destroy completely the freedom of the will in that province whose cultivation it undertook, and in its place bring forth strict necessity of resolution, and the impossibility of the opposite, in the will; a will upon which one then could reckon and rely."

FICHTE, Second *Address to the German Nation*

"Not the slightest breath of transcendental freedom may blow into the realm of the educator through ever so small a cranny. What *could* he then begin with the lawless miracle of a supernatural being, upon whose co-operation he could not reckon, and whose reactions he could neither foresee nor prepare for? Supply inducements, you may say, or remove hindrances. *Hindrances*. Then, was the absolutely free will hindered? *Inducements*. Are there, then, inducements for it other than its own originations?"

HERBART, *Ueber die æsthetische Darstellung der Welt als das Hauptgeschaeft der Erziehung*

MOST discussions with groups of students, at any rate Scottish students, about the philosophy of education, wherever they may start, generally arrive before the end of the hour at some form of the eternal question of free will, which clearly is at the bottom of the problem of how much we may hope to effect by means of education. It would be cowardly to leave the question untouched in a book which professes to be on the philosophy of education, especially as part of it is involved in the chapters on the relative influences of heredity and environment.

There are various forms of the problem. One is connected with materialism, and with the rising tide of scientific investigation and discovery. In that form, the

argument which leads to the difficulty is somewhat of this nature. To science, this world appears to be a causal world, where nothing happens unless the antecedents are of such a kind and configuration that just that thing and nothing else could happen. Science collects and simplifies the laws according to which the causal connections follow one another. To the scientist, the same cause, in all its completeness, always produces the same result, and any result, when known in all its completeness, is always produced by the same cause. Moreover, the world appears to the scientist to be composed of matter, the structure and behaviour of which is his study. Its structure and nature has, it is true, turned out to seem to the twentieth-century scientist something very different from anything that could have been foreseen by the scientist of one hundred years ago. Still, it is something which appears to the scientist to have a separate and enduring existence of its own, though its form may change, and though it may be of a less solid nature, if I may put it that way, than was anticipated. For the older scientist the atom was a small piece of matter like the stuff we know. Later it was found to be made of electrons, each of which bore an electric charge and possessed inertia. Then the inertia of the electric charge was found in itself to be enough to explain all the phenomena, and the speck of matter disappeared, leaving only the charge. But this was not doing away with matter, only identifying it with electricity in motion. Now, the latter itself is of a nature only to be understood by initiates who, as Sir Alfred Ewing once remarked, have divested themselves of all their previous beliefs and

prejudices as one divests oneself of one's warm and familiar clothing before taking a plunge into a cold and unknown sea. But that some primordial stuff is still there is what we must think; it is a necessity of thought. And this stuff, this matter, obeys laws, many of which we have discovered. And there seems no reason why we should not discover more, and no bar to conceiving of a creature which might know them all. Those laws once known, from the whole configuration and motions and accelerations and so on of the universe at any one time, there could be predicted all that would happen ever afterwards, and all that had preceded would be known. And even though no creature could ever actually possess the knowledge and skill to perform this feat, the fact would remain that the procession of events is settled, and has always been settled. Where, then, is there any room for free will, and how can I or any teacher influence the course of events by educating the young? Is my desire to educate a boy in right actions and in wisdom only itself something which was bound to be—is it only the inside feeling of a link in a chain which was predestined at the Creation? Could I not act otherwise? And if I say, "Yes, of course I could, and can, and I will now do so to prove the truth of my words", is not perhaps even *that* action just what the previous configuration of the electrons determined, they themselves having been similarly determined from behind?

The most obvious attempt to escape from this materialistic form of determinism is to admit it as far as matter is concerned, but to deny that mind, will, is affected by the determinism of the material world. Then,

however, there are two difficulties to be met. In the first place, there can be no doubt that the mind and the body are closely connected. Injury to the brain causes a change in the mind. Changes in other parts of the body do so likewise, as, for example, the removal of a gland or the application of the lash, or the destruction before the age of five of the organs of hearing. We cannot be sure that the destruction of the brain causes the disappearance of the mind, but we have only faith, and the very doubtful and rather repellent evidence of the psychic research people to the contrary. As time goes on, there accumulates more and more evidence of the close connection of brain and mind, and what is to many people a nightmare possibility, that the connection may be perfect, unique, one-to-one, is nevertheless obviously something which can be conceived, which seems to come ever nearer of proof though admittedly far enough from being as yet definitely proven, and which, if true, would mean that mind would be determined if the brain is. Now our attempted escape from determinism began by admitting that matter is determined. But the brain is matter, and its successive conditions are therefore determined. And we have just envisaged the possibility that the brain determines the mind, in which case the mind also would be determined. We must, therefore, to ensure our escape, postulate that there may be conditions of the mind which correspond to no condition of the brain, a hypothesis which few scientists would honestly subscribe to. Those who hold the doctrine of psycho-physical parallelism, according to which there is, it is true, a one-to-one correspondence of conditions of the brain and of the mind,

but no causal connection, are only avoiding the issue by a subterfuge, for there is no real distinction between invariable and inevitable concomitance and causality. If *x* always occurs whenever *c* does, and never occurs unless *c* does, then there *is* a causal connection between them—that is, indeed, the only definition of causal connection. In some cases we are so familiar with the links which intervene between *c* and *x* that we say we understand why *x* follows *c*. But that, of course, is only a conceit. We do not know *why* anything under the sun happens, only *that* it happens, and the laws of its happening in some cases.

The second difficulty in the way of the attempted escape from determinism by denying it for mind though admitting it for matter is this, that even if we assume some condition of mind to occur independently of all antecedent happenings, we may not allow this condition of mind to make itself known in any way by action in this material world, for we have admitted that the successive conditions of the material world are predetermined, and therefore not to be changed by a totally new and undetermined state of somebody's mind. The person who is experiencing the new and undetermined state of mind may not communicate it to anyone else, unless he can do so by thought transference, for even to speak means to set in motion the waves of the air, and we have admitted that they are predetermined. We must, therefore, either withdraw that admission or be content with a free will which can never express itself in any way in the material world, not even to write down its thoughts. That, of course, is not what we mean by free will. We

mean the will to *do* something independently of all previous happenings. The egocentric kind of free will, shut up eternally in its own mind, would at any rate have no bearing on the problem of education, which implies influencing another mind through the material world, if only by speech.

Our first attempt to escape, therefore, results in this, that either we must withdraw our admission of determinism in the material world or we must suppose that there are states of mind which do not correspond to states of the brain and body; and in the latter case we must be content to think of these states of mind as inarticulate, shut up each in its own mind, without possibility of communication to other minds unless thought-transference, independent of the physical world, is a fact, and even then without possibility of doing anything whatever in the physical world. This, in short, means that the admission of determinism in the material world carries with it the denial of what the ordinary man calls free will in the mental world.

Let us, then, turn to the material world again. Where is determinism most completely proved, and where is there still a doubt of its sway? It is most completely proved in the science of physics, which handles what we call dead matter, and it is still a comparatively open question in all forms of biology, which handles living organisms. Is there, then, a possible escape by admitting determinism in the first case, but preserving freedom in the second? Alas, no. For the above argument repeats itself. Living organisms may be free, only on condition that they do not interfere in any way with dead matter,

which *ex hypothesi* is determined. That, of course, is quite impossible, even more obviously than in the case of mental freedom. For living objects must interfere with dead matter. They eat it, for example; they swim in it, breathe it, and, indeed, are presumably made of it. At any rate, they excrete it, their glands produce it, they wear it on their bodies, No, if dead matter is determined, then so, too, is the living animal, unless it is content to be a ghost.

The only avenue of escape is to deny the determinism of matter, either entirely or at the points where it comes into contact with life, or at the points where it comes into contact with mind. This is presumably what the reader really meant if, at an earlier stage of the argument, he was prepared to admit determinism of matter. He meant, determinism when away in a dead world by itself. If mind is to be free, it must be free to influence matter or the living organism must be so free. Let us consider the relative difficulty of these two forms of possibility.

Most people feel perhaps a certain difficulty, but not an insuperable difficulty, in admitting the possibility that animals and plants may be automata. We see microscopic animals apparently the creatures of circumstance. They are, perhaps, heliotropic—that is, they move towards any light, and inevitably reverse their movements when the light is moved from south to north of them. If two lights of different strength and position are shown to them, they move along the resultant. As we go higher in the scale, we see animals acting more in accordance with our own ideas of action. But we nevertheless always ask ourselves why an animal acts in such and such a way.

We assume in our daily life that there is some reason for the animal's action. We assume that if we can drop the right fly in the proper natural manner before the snout of the hungry trout, it will take it. We speak of luck, and of the capriciousness of the quarry, but we really mean that we do not know all the circumstances, and we are always acquainted with some more skilful hunter who is better informed than we are, and therefore finds the animal's movements less mysterious.

It is when we come to our own minds that we have the difficulty. We refuse to allow that they are predetermined by any concatenation of material circumstances. We can always "change our mind". We require freedom even from our own vital, living bodies, and we feel on the whole that we have that freedom. We know that often the spirit is willing though the flesh is weak. But we think of other cases where spirit seems to have overcome body. It would not content us to be told that living matter could do things not predictable by physical law. We want an admission that mind can do things not predictable of a living body.

But consider what either of these would mean. In the case of the living body, it would not be enough to say that it did things unpredictable by the laws which are sufficient for dead matter. It would have to follow no law at all, if there was not to be predetermination. That, I think, is more than any scientist can possibly believe. There remains the possibility that he might believe it of mind. Many do there believe it, and more are content to put the question aside without at any rate denying this possibility.

The rising tide of materialism, then, and the study of the general laws by which matter is found to act, with the study of further laws by biologists and animal psychologists which appear to enable the actions of animals to be predicted—all these things have made the free will problem more insistent, and have driven the ordinary man to the last stronghold of free will, the mind itself, a mind which must, if free will is to have any meaning which will satisfy him, possess the power of influencing and modifying matter in ways not predictable from the previous configuration of the matter. He does not mean by that the power to perform miracles. That would mean breaking the laws of matter in profound ways. But he does mean the power to interfere and direct the workings of matter within bounds set by its nature. That power man does appear to have, and he feels that he can exercise it or not as he thinks fit. If so, and if, as seems extremely probable, his brain is an automaton, then there must be, at least momentarily, states of mind independent of states of brain.

It is, however, possible that the sense of freedom, and, indeed, for all practical purposes the reality of freedom, comes from the extreme complexity of the brain and nervous system. But before we develop this line of argument, let us turn from the materialistic form of the free will versus determinism problem to a form which is entirely mental. Let us ignore the material world. It is possible logically to do so, for my immediate knowledge consists of sensations which follow one another in various sequences, and it is an unconscious piece of theorizing on my part when I attribute these sensations

to the existence of external objects. True, it is an extremely useful theory, and it is very difficult to see what other theory could satisfy the mind. Still, it is, as soon as one comes to think about it, a theory. This does not imply that the naïve person makes this theory consciously. It only means that the sophisticated man realizes that what he actually knows is that he experiences certain feelings of colour, touch, and the rest, and that these recur in ways which he has been accustomed to call sitting down, walking up the street, eating poached eggs, or fondling his grandchild. The actual existence of the street or the egg as separately enduring entities is something which he has been postulating without proof. Still more is the existence of his grandchild a hypothesis. For he only assumes that she feels, thinks, and is conscious because that is the simplest explanation of the series of sensations which he experiences. Of course, he does not do this explicitly if he is just an ordinary man, and if you were to attempt to tell him anything like the above he would consider you a silly ass. And if you do not yourself act on the theory that there are really objects in the world, and grandchildren, and other persons, then, indeed, you are a silly ass. But philosophers have the privilege of pointing out that, nevertheless, we do not know these things in any direct way. It is, that is to say, possible to make out a case for there being nothing in the universe but consciousness, and for that matter, nothing but my consciousness.

Remaining, however, entirely within the mental world, there is still the possibility of a deterministic hypothesis. What I think at the present moment is certainly influenced

by the past history of my thinking. The fact that I have such and such memories, that I have had these hatreds and those affections, all these things influence, at any rate, my present thought: and it is not far to the idea that they determine it completely. A Mohammedan does not suddenly or easily become a Buddhist, nor a historian a mathematician, nor a Republican a Democrat. Indeed, the whole of education is based on the idea that what we can get children to think and experience in their consciousness to-day will influence what is there to-morrow. And when a Republican does become a Democrat, the interviewer asks him quite naturally what caused the change in his opinion. He takes for granted that something has caused it. He takes for granted the determinist position. We see that some measure of determinism is necessary before education can have any meaning, for otherwise what we taught children to-day would not influence them to-morrow. Yet we object to the complete doctrine of determinism, since it implies that what we are teaching to-day is forced upon us by our own past mental history, and that any impression that we are acting off our own bat is merely a delusion.

Where have we now arrived? I think that any unprejudiced person would say that much the simplest solution of all the difficulties we have been tabulating is just to admit determinism. Why, then, do we not do so? One reason why we do not do so is, in fact, an argument on the determinist side, namely that we have been taught certain beliefs in the past which are inconsistent with determinism and prevent us from accepting it. I do not myself belittle that reason, or wish to give pain

to any who may for the moment feel their religious faith touched. I only wish to point out what counsel for the other side might say. Even those who most emphatically set aside determinism for such reasons would not urge that there is any "argument" in what they do or say. They appeal to something which transcends logic, whereas we here are for the time being engaged in a logical argument, and so we must disregard their experience.

Keeping on the lower plane, and making no appeal to religion, the reasons we have for rejecting determinism are chiefly that we have so strongly the impression that we can in an emergency, or even in the ordinary affairs of life, make an entirely undetermined decision; that we feel that if determinism in its rigid form were indeed the truth, there would be no savour left in life, and man might sink into fatalism and apathy; and that we are aware in our own experience, and in history, of very varied situations, ranging from those in which man has been enslaved by others, or at the mercy of circumstances, to those in which he has been very largely his own master, and has controlled the environment in his own favour and at his own will to a considerable extent.

Here I would like to return to a remark made a few paragraphs ago, that the sense of freedom, and, indeed, for all practical purposes the reality of freedom, may arise from complexity. This is one of the ways in which I, like I suppose everyone else who has given thought to the matter, try to escape from the *cul-de-sac* into which one feels oneself driven by the scientific argument. Philosophically the solution is probably quite inadequate, but it appears to me to have some fragment of relief

in it. It is observable that decision, choice, or those actions which we denominate by those and similar words, are found in increasing clarity as we progress in the animal kingdom up the scale of complexity of nervous apparatus. Consciousness itself appears to vary in the same direction, as far as we can judge of its presence, and to be clearer as the nervous system, which is an apparatus for making connections between different parts of the body, becomes capable of making large numbers of such connections.

The simple animalcula has a few such connections, and they do not clash much or at all. It has a few reactions which form its method of meeting the various situations which commonly confront it. Each occurs automatically, and they are called up by different stimuli.

As the animal becomes more complex, its nervous system supplies it with many reactions to the stimuli of the outer world. The situations which set these reactions off are no longer so definitely discrete and separate. Situations may occur which tend to touch off more than one of the reactions—for example, a dangerous situation may impel to flight, or to immovability, or to pugnacious movements. The reactions must be very finely balanced. Occasionally they may even be exactly balanced, and a unique and new state of the animal occurs. It has by this time consciousness, and this state is the condition in which for the first time there is any need or possibility for decision in our ordinary sense of the word. What would in such a case be likely to happen to the donkey between the two bundles of hay of which the schoolmen used to speak? We will suppose that the outer situation

does not change, but remains exactly as it is. The animal's mind, however, will not remain stationary. Memories will pass through it—that is to say, excitements of certain nerve cells, accompanied by consciousness, caused by the past experiences of the animal. That they, too, should give no turn to the balanced state of equilibrium is incredible, or rather they might do so but would not actually, just as I might throw ten thousand heads running at pitch and toss, but don't. Now what has caused the "decision" is, of course, the past history of the animal, and therefore in a certain sense the decision was predetermined. But the animal, as a mental being, *is* its own past history. It feels *itself* to have made the decision. For the simple animal, then, the outer stimulus decides the reaction. As it becomes more complex, there are conflicts because the number of reactions is great, and they are provoked by very slight differences in the outer situation, so that there is hesitation as that outer situation becomes clearer or changes slightly. As this is going on, the memories of the past are also before the mind, or in behaviouristic terms, the possible reactions are somewhat prejudiced by the frequency, recency, etc., of their former occurrences and by the results, pleasant or painful, which followed, and these past memories play the decisive part in determining the reaction which is ultimately adopted on the present occasion. The animal being nothing more than these past memories mentally, feels, therefore, that it has made the decision, and if it is admitted to be correct that the animal is nothing more than its past memories, then, indeed, it has made the decision.

This is, perhaps, only a complicated way of saying that

free will is a delusion. But it takes away some of the difficulty for me, though how others will react to it I cannot say.

There is yet another point of view which is useful in making it clear that straight, simple materialism is inadequate to describe everything, though it may possibly explain everything in the sense of enabling calculation to predict. The most potent evidence against a creed of nothing but materialism is the simple fact that we are conscious, or, at the very least, I am conscious. Consciousness is such an extraordinary thing to the scientist, and such a simple, obvious thing to the plain man. Now the world which we assume to be outside us is known to us in three-dimensional space, and in time. It is only known to us through our senses, and what on earth it is when no one is sensing it is a mystery which is insoluble. It need not be blue and red and coloured in itself, for these are obviously characteristics which I impose upon it by reason of my mental reaction to the sense stimuli. If we had all been colour-blind the world would have been differently coloured. And if I assert that we are, indeed, all colour-blind, and that the true colour vision has not yet been created, who is there to contradict me? Or who, if I say that the world has no such thing as colour at all? And if colour, why not every other property, such as smell, sound, aye, and touch, and the property of being in three-dimensional space and in time: in which case, where has your materialism gone to?

But it is not materialism we are discussing, except in so far as it is an ally of determinism. Determinism, however, depends entirely upon the concept of time, as,

indeed, possibly causation itself does, though that is not quite so certain. I grant you, that free will also depends upon the concept of time. But at least it will be admitted that if time is something impressed as a mould upon reality by our equally real minds, then the conflict between free will and determinism takes on a totally different aspect, and most probably disappears with the contending parties, merged into a new kind of universe.

I hope I have said enough to persuade any naïve materialists, and even any determinists of a more subtle colour, that the problem is not a simple one, even though the evidence on the determinist side is, so long as one does not look very far ahead, apparently unanswerable as far as it goes. And other complications may occur to the reader. For example, we know the outer world in terms of the analysis forced upon us by our senses, which select certain aspects like plums from a pudding, disregarding a possible matrix in which these plums may be embedded. Our causal world we then build up out of these plums, making a kind of skeleton pudding without any dough. We do not, of course, know that there is any dough. But why should there not be? And may not the whole pudding, could we know it, have very different properties from the artefact we have built up, the laws of which are perfectly true for plums, but perhaps for plums only?

Further, time, which we have just seen to be essential to the ideas of free will and determinism, quite apart from its possible mental nature referred to above, has recently been shown to be inextricably mixed up with space, so that conceivably beings meeting at the same

point in space, provided that they have travelled by sufficiently different paths since their last meeting, may find on comparing notes that they have lived through different lengths of time: and the events which are going on simultaneously with their meeting, in other parts of the universe, will, if they are passing each other at very different speeds, be different sets of events. Einstein, with his theory of relativity, has certainly put a different complexion on all problems involving time, and our present problem involves time.

But enough. This chapter certainly will not solve a problem which has exercised the minds of thoughtful men since the beginning of history. But it was, I think, necessary, since my experience is that there are always numbers of students, in that impressionable age at which they come to training as teachers, who are inwardly worried about these matters, and who in some cases feel that their tutors are passing over without remark what would destroy the whole force of their teaching, or who, in other cases, see very clearly only one side of the problem, and have never let their minds dwell on it as a whole. No doubt this chapter also is one-sided. But at least it may have given the impression that the existence of the problem is not unknown to the writer, and it may have suggested, not, of course, to philosophers, but perhaps to students who have had no training whatever in that form of thought, some new ways of looking at old facts which may make the thinker rather more humble and less confident in the ability of himself or perhaps of any man to solve this problem.

The practical answer is, that in that limited part of

the universe and in that short space of time in which it is given him to work, man has a free will and can influence events and the lives of others, as the teacher does. Indeed, the modern thinker on education is so much a believer in the freedom of the will that he strongly deprecates any undue influence brought to bear on the pupil which may lame and hinder that freedom. He is anxious not to impress doctrines on him, but to let him form his own opinions when in possession of the facts and after having lived through the essential experiences. He wishes school, therefore, to be a place where experiences such as will enable and encourage the pupil to form his own opinions may be lived through. He is opposed to authoritarianism of any sort (though paradoxically enough he is living in an age of increasing state control, and is helping that control forward by his active co-operation in much of it). Perhaps it would be more correct to say that he is opposed to any authoritarianism except that of the free individual over himself, and of corporations of free individuals over their members. The school he wishes to be such a corporation, and the state likewise.

John Dewey's opposition to authoritarianism even goes the length of refusing to recognize any aim or end for education. The determinism which we have spoken of above has been in every case determinism in which the past controlled the present and through it the future. But even if we allow that the future may control the present, as when we work towards some end or goal, we must admit that we are thereby indicating another form of determinism, that we are shaping our path by some distant beacon when we are quite unaware of the changes

which the intervening country may suggest. If I understand Dewey aright (and I am by no means sure that I do), he objects to any static and fixed goal being set up for us to aim at, because he believes that progress is unending, and that every step teaches something, not merely about the means to the end, but about the end.

If I may draw an analogy with carrying out a piece of scientific research, I would say that anyone who begins such a task with a preconceived idea of the end to be reached is likely to fail. I do not merely mean that he may be tempted consciously or unconsciously to twist his experiments to suit his theory. He may very honestly permit the experiments to decide yes or no *about that theory*. But, then, it may have been entirely a mistaken kind of theory, and to have held it to the exclusion of anything which was not either for or against it may have blinded the worker to most important possibilities. Of course, he has to have at each step a working hypothesis of the matter to direct his next step. But not a hypothesis which has decided at the beginning what all the steps are going to be, and that the truth is either black or white, when it may very well be rainbow-coloured. I am reminded of a remark of the German professor under whom I carried out a physical research. I took a whole term to get preliminaries arranged in my mind, and I was encouraged in this procrastination by the chief assistant of the laboratory, who also wished to see the whole research planned and the possibilities cut and dried before actual work was begun. The professor cut the whole short one day by arriving in my room with some old apparatus which had been used for an earlier

research on the same lines, and telling me to get on with it; while to a mild protest from the assistant he replied: "*Ach was, man lernt ja von den Dingern selbst.*" And the research, which was quite satisfyingly successful, did, in fact, take a course different from any we had anticipated, its only general aim being to find out the next most interesting thing about the passage of electric waves through gratings, suggested by what I had already found.

Dewey's philosophy of education, then, involves a belief that in school, as in life, each moment should be creative, and not merely a link in a predetermined chain, or for that matter in a chain determined by the future, if by that is meant a vision of perfection. Perfection for him is not a state, it is a movement, a progress; and nothing hinders the latter more than to be hide-bound by any notion of the former.

And as a last remark on science and free will, it is profitable to let one's mind dwell on the paradox that those studies which have led many to materialism and the most rigid form of determinism are in point of practical fact the same studies which have enabled man to interfere most in the course of events, and have put into his hands the possibility not merely of changing his environment to an extent hitherto undreamed of, but of changing himself by selection and suitable mating, so that while events may have made him what he is, he will have a hand in making the man of the future.

CHAPTER VII

HEREDITY AND EDUCATION

"Art may make a suit of clothes; but nature must produce a man."
HUME, Essay XIV, *The Epicurean*

"Acknowledge, therefore, O man! the beneficence of nature; for she has given thee that intelligence which supplies all thy necessities."
HUME, Essay XV, *The Stoic*

I MAKE no apology for proposing to devote several pages to the consideration of the phenomena of heredity in a book on the philosophy of education; for it is clearly quite impossible to make up our minds on a number of educational problems until we have decided what the relative influences of heredity and environment are in the lifetime of an individual.

Our opinions and beliefs in this matter will influence our beliefs in what education can accomplish. In the one extreme it can do anything. In the other extreme it can do nothing, except permit characteristics to appear—that is, prevent their repression.

Our belief in the relative importance of heredity and environment will influence our action in segregating or otherwise the gifted or the dull, and in blaming or otherwise the teacher of a dull or a gifted class. Generally, if we believe more in heredity we will in our methods "keep the ring" and allow development, not imagining we are creating it. If we believe more in the influence of environment, we will expect good methods to show greater results; and it will never be too late to mend.

Now it seems clear that before we can come to any

conclusions on this matter we must have at least a working knowledge of what is well established about the mechanism of heredity. The idea that like produces like must always have been familiar to man, for he could see with the most untrained eyes that an apple-tree did not produce figs, or the egg of an eagle a dove. Moreover, even in pre-Darwinian days the further idea, that within the species the children tended to resemble their parents in some detail, often arose, and Lamarck and others had theories of evolution based on this fact.

Darwin added, however, an emphasis on the power of selection to modify a species by shortening the life and therefore the fecundity of some parents, and lengthening the life and therefore increasing the fecundity of others. Moreover, he widened the generalization to include the possibility of all genera as well as all species having been separated in this way from one common ancestor; and he did not hesitate to include man.

The changes since Darwin's time have been mainly two. In the first place, instead of the idea of selection working on infinitesimal variations, and by continued action over a long period of time producing any desired amount of change, there has come from the work of the Mendelians the idea of the variations upon which selection works being definite steps, units, or mutations, which may be large or small, but at least are not, as a rule, infinitesimal. And in the second place, the idea of the inheritance of acquired characteristics had until lately been fairly definitely given up, although the allied but easily distinguishable idea of the acquirement of heritable characters, the possibility of the environment influencing

the germ cells, and hence the offspring, of an individual, has recently been placed on an experimental basis by the work of Harrison.

The Mendelian theory of inheritance is a theory which postulates that the nature of a certain quality in a plant or animal is settled by a minute "determiner" in both of the "gametes" whose union created the individual in question. The gametes are the minute sex cells, one from the male parent (the sperm, in an animal) and one from the female parent (the unfertilized egg). The individual developed from the fertilized egg has two sets of these factors, one set from each parent. For example, an edible pea plant has two factors which determine whether it will be tall or dwarf, one factor from each parent plant. If both the factors are factors for dwarfness, the plant will be a dwarf plant. If both are factors for tallness, the plant will be a tall plant. If one factor is for dwarfness and one for tallness, then the plant will be tall, tallness being, as we say, "dominant" over dwarfness, which is said to be "recessive". In the case of some qualities, however, there is no dominance, the result of two different factors being to give an intermediate or a different quality. For example, in a certain kind of fowl, mating white and black gives neither, but a new colour, which the fanciers call blue, produced when the fertilized egg has a black factor from the one parent and a white factor from the other. Dominance itself, according to a recent theory with statistical support enunciated by R. A. Fisher, is an effect of natural selection and one which curiously has nothing to do with the adaptation of the species to the conditions of its environment. But that is a side-track,

though it is interesting to learn that certain qualities dominant in one species are not so in quite closely allied species, and that changes can be expected in the degree of dominance, due no doubt to changes in the background of other qualities formed by the other factors of the make-up.

For each of his qualities, therefore, an individual has two factors, one from each parent, which may be the same or different. If they are the same the individual is "duplex" for that quality, or "homozygous"; if they are different he is "heterozygous", or "simplex", or "hybrid". The factors themselves are technically called "genes".

When the individual comes to form its own sperm or egg cells, however, each such gamete contains only one set of factors. The set of factors found in a gamete need not be the whole set which has come from the male parent, or from the female parent, of the individual who produces that gamete. Some of the factors or genes may have come from the mother, some from the father, of the individual who produces the sperm or egg. But in the sperm or egg there is only one set, and therefore the gamete cannot be hybrid.

These genes are borne upon certain thread-like bodies, microscopic in size, within the gamete, of which "chromosomes", as they are called, there may be only few, say four, as in Drosophila or the fruit-fly, or many, as twenty-four in man. In number, size, and form they are constant in a species.

With this theory we may try to follow the mode of inheritance of some simple character (such as tallness

in the edible pea) which is dominant. Let us speak, however, of a hypothetical quality Q-ness. (1) Suppose we mate two individuals who are pure-bred for Q-ness. That is to say, they are duplex for that quality, and have each the double factor. All the gametes of both these individuals, therefore, will carry a Q-ness gene, and the union of two such gametes will necessarily give rise to a duplex individual pure-bed for Q-ness (Case 1).

Case 1. **qq mates with qq. Children qq, qq, qq, qq.**

(2) Still more easily we can see that if each parent is "nulliplex" for Q-ness—that is, if neither gene of either parent is a Q-gene—then none of the offspring can possibly show the character (Case 2).

Case 2. **xx mates with xx. Children xx, xx, xx, xx.**

(3) Let us now, however, mate two individuals who are simplex for Q, are, in fact, hybrids. Each of the parents will exhibit the quality Q-ness in his or her own person, since we have postulated that Q-ness is a dominant character, i.e. one dose of Q-ness in an individual is enough to produce the external appearance of Q-ness. But since these individuals are simplex, the gametes which they produce will be of two kinds, one sort carrying a Q gene, the other sort carrying a non-Q gene. If a Q gene from one parent meets a Q gene from the other, the union will give rise to a new individual who is duplex, who will not only show Q-ness in his person, but will have two doses of it in his internal composition.

Case 3. **qx mates with qx. Children qq, qx, xq, xx.**

If a non-Q gene from one parent meets a non-Q gene from the other, the new individual thus formed will have no Q-ness in his make up, in spite of both his Q parents. If a Q gene from the male parent meets a non-Q gene from the female, or vice versa, we will have an individual formed who, like his parents, is simplex or hybrid. He will show Q-ness, but will be capable of producing gametes which are non-Q. The offspring of our parent couple, therefore, will be in the long run three-quarters Q in appearance (viz. qq, qx, and xq), and one-quarter non-Q (viz. the individual xx).

(4) In a similar fashion we can study the mating of a duplex with a simplex individual, where all the offspring will show Q-ness.

Case 4. **qq mates with qx. Children qq, qx, qq, qx.**

(5) Or the mating of a duplex with a nulliplex parent, where all the offspring will show Q-ness, but none of them can be duplex, all must be hybrid.

Case 5. **qq mates with xx. Children qx, qx, qx, qx.**

Note the peculiar fact that the offspring of two hybrids may be a pure-bred individual (see Case 3), whereas the offspring of a pure-bred duplex and a pure-bred nulliplex are all hybrid (see Case 5).

If the character attracting our attention had been a recessive character, the interpretation of these cases would have been different. Let us call the recessive character X-osity, and reconsider the cases with an eye on the character indicated by x. Since it is recessive, it will not

show unless the individual receives two doses of it, one from each parent. In Case 3 only one of the offspring would show the character, which is not shown by either of his parents. In Case 5 none of the offspring show it, although the one parent does so. If, however, two of the offspring of Case 5 mate, Case 3 would be repeated, and we have the often-noticed phenomenon of a recessive character skipping a generation to appear in the grandchildren.

These considerations make it clear that many persons may be "carriers" of recessive characters, and that we cannot find out whether they are hybrids or not, except by mating them and noting the offspring. This is what leads to the prejudice against the marriage of cousins, for if there is any undesirable trait in a family which is of a recessive nature, it is clear that there is a danger that both the cousins, even though themselves free from external X-osity, may be carriers of it, in which case there would be one chance in four that their child would show the defect openly, namely if he happened to be the result of the union of a carrier gamete from each parent.

I am going over these facts not because the actual knowledge of them is of importance to educators, but because I wish to convey the impression to those who have not made a study of genetics of the existence of a body of exact knowledge of the laws of inheritance which must have a very definite influence on our opinion of the relative importance of heredity and education.

The genes or determining factors are, I said, borne upon bodies called chromosomes, which are, as it were,

threads of beads, each bead a gene. There are in man twenty-four pairs of chromosomes. But we shall turn to the simpler case of the banana-fly, Drosophila, where there are four pairs. There are far more genes than four —several dozen have already been studied in Drosophila —and since there are only four chromosomes it is clear that the genes must be linked in four families, which tend to go together. We thus see that complications may arise in our schemes of heredity. Let us first of all consider the inheritance of two qualities on the supposition that the genes are borne upon separate chromosomes. Let us mate an individual duplex in both qualities with one nulliplex in both. To make for clearness, let us speak of Drosophila and of the two qualities, long wings and greyness, whose opposites are stumpy wings and blackness. Then clearly every one of the offspring must have a long-winged gene and a stumpy-winged gene, and likewise a grey gene and a black gene. Since long wings and grey colour are dominant, they will all appear normal. Now mate one of them with a stumpy-winged black individual. Then, if the four genes of the one parent (long, stumpy, black, grey) were at liberty to combine at random with the four genes of the other, there would be four possible kinds of offspring: long-grey, stumpy-grey, long-black, and stumpy-black. This is not, however, what really happens, and the reason is that the gene for wingedness is borne upon the same chromosome as that for colour (black or grey), so that it proves impossible to separate long-wingedness from greyness by mating in this way.

Nevertheless, it does sometimes happen that qualities

whose genes are borne on the same chromosome do separate in mating. This phenomenon comes about in this way. It will be remembered that each ordinary cell of an individual has two complete sets of chromosomes, one of which has come from one parent, and the other from the other. The gametes of an individual, however, i.e. the sperms or the eggs, have each only one set of chromosomes. During the process of production of a gamete the pairs of like chromosomes come together and cling and intertwine intimately and closely. They then split apart again, and retire to different parts of the cell, which then divides in two in such a way that each half of the cell contains only one set of chromosomes. Now when a pair of chromosomes separate after having been intertwined, it seems that sometimes they swap small pieces of each other. In this way one chromosome may carry away some of the genes really belonging to the other, and vice versa, and so the intimate linkage of genes borne on the same chromosome may come to be broken.

It is clear that two genes are more likely to be separated in this way if their positions on the chromosome are far apart, like beads far apart on a string of beads. Whereas genes which are close neighbours on a chromosome will be separated much less frequently. This has enabled T. H. Morgan to make actual measurements, in units which have in honour of him been called "morgans", of the distance apart on each of the chromosomes of Drosophila, of the numerous genes which have been identified, a number now approaching one hundred. By the various permutations and combinations of these which can be produced by crossing, Morgan can produce at

will many kinds of Drosophila. Some of the combinations, it should be added, are lethal, i.e. they cannot coexist in an individual which survives.

To complete an elementary picture of this Mendelian mechanism, I would ask you next to consider the phenomenon of sex-linkage in inheritance. Sex itself is a unit Mendelian factor of a peculiar sort, for the chromosome which carries the male quality is a kind of dummy; it may, indeed, be said to be missing. In Drosophila, then, a female has two sex chromosomes, a male has only one. Females produce eggs which have one sex chromosome each. Males produce sperm which have, half of them, one sex chromosome, and half of them none. The latter kind produce males, the former females.

Now Drosophila usually has red eyes. In Morgan's cultures, however, there appeared a male with white eyes. This white-eyed male was mated to an ordinary red-eyed female. They produced offspring half male and half female, but all red-eyed. If two of these offspring be then mated, one-quarter of their offspring—grandchildren of the original couple—are white-eyed; and *all these white-eyed individuals are males, like the original white-eyed insect*. The character is linked with sex. Let us follow this in terms of genes and chromosomes.

The original white-eyed male produces two kinds of sperm, with and without the sex chromosome. Those without the sex chromosome are in no way different from those (equally without the sex chromosome) produced by an ordinary red-eyed male. In neither case do they carry a sex chromosome, and therefore in neither case do they carry a gene for eye-colour, for this gene is borne by

the sex chromosome. The "vacant" sperms (as we may call them) of our white-eyed male will produce, of course, males, and these males will all have their eye-colour determined by the mother; they will all be red-eyed, and will lack entirely the white factor.

The other sperms, however, will contain a sex chromosome, and this sex chromosome will carry the white factor. The females thus produced will necessarily be hybrids possessing both the red and the white factors. It is the red factor which shows in their case—that is to say, red is dominant to white. But their eggs will bear either the red or the white factor. When one of them mates with an ordinary male there are red and white eggs, and red and "vacant" sperms. The flies produced will, therefore, arise from the combinations:—

Egg.	*Sperm.*	
red	red	red-eyed female
white	red	red-eyed female
red	vacant	red-eyed male
white	vacant	white-eyed male

The females, although all red, will not all bear the double dose of redness. If one bearing only the single dose is mated with the white-eyed male the possible combinations are:—

Egg.	*Sperm.*	
red	white	red-eyed female
white	white	white-eyed female
red	vacant	red-eyed male
white	vacant	white-eyed male

White-eyed-ness will clearly be more frequent in males than in females. The reason is that it is recessive and

cannot appear in a female, except when duplex. But a male only has the one chromosome, and therefore the one dose of white can be present without the counteracting dose of red, which would dominate.

The picture of heredity which is obtained by a combination of Darwin's principle of selection with Mendel's theory of unit characters is, therefore, one of a continual reshuffling of those characters by the mechanism of sex, which demands that a combination of genes from two individuals shall come together and form a new individual. This is as though each individual were formed like a new whist hand, by taking one-half from each of two existing hands. The pair of parent hands may be good, bad, or indifferent; they may have special peculiarities, such as being suitable for a no-trump call, or a call in clubs only. The new individual, the new hand, may, however, be very different, for a new combination may arise which has very different powers from either of the parent hands.

It is at once clear that this process of shuffling and redealing unit characters which the sex mechanism provides will rapidly produce all sorts of permutations and combinations, and that these may be very numerous, as hands at bridge are very numerous and varied. When one remembers that man not only has twenty-four chromosomes, but has numerous genes on each chromosome, it will be easily appreciated that all sorts and conditions of men are readily producible by this means. On these permutations selection does its work, so that only some become the parents of the next generation. It will also, however, be easily appreciated that a recessive

character will offer more resistance to breeding out in an unfavourable environment than will a dominant character, for a recessive character may be carried by people who do not show it, and who therefore do not suffer any selection on its account.

The theory, so far, offers no suggestion that anything new can occur except new combinations of existing factors. Before passing on from this to consider how new genes may perhaps be produced, let us remind ourselves that new combinations may be very new things in the most real sense. Plants produced by crossing may be most unlike the parents, and the bringing together into one individual of genes which have never coexisted before may well have most surprising results.

At the same time, most people feel a mental difficulty about understanding how the present complex fauna and flora of the world could have arisen merely from the various permutations of existing genes. That is why the inheritance of acquired characters is so natural a theory to think. Numerous experiments, however, have in most cases shown that habits or powers acquired by an individual during his or her lifetime are not passed on to the next generation by the mechanism of heredity, although they may be passed on by social inheritance, i.e. by education in the home or in the school. That is to say, the kind of life which an individual lives, although it may very profoundly change his own bodily or mental powers, does not, as a rule, change the kind of gametes which he can produce, and has no effect on his offspring through heredity. This requires, in the case of the mother, to be tempered by the remembrance that during

the prenatal stage of the child's existence the mother actually is the environment of the child, and so may have an influence in that way, although not through her gametes.

It is true that there have been experiments reported which appeared to be exceptions to the non-inheritance of acquired characteristics. One of these, I understand, was due to a misunderstanding now cleared up. Pavlov's experiments on rats which were trained to come for food to the sound of a bell, and McDougall's experiments on rats escaping from a swimming-bath, are hardly yet, it would seem, to be regarded as confirmed. Recently, however, the work of J. W. H. Harrison has directed attention to the possibility of certain environmental factors influencing the gametes and thus creating new mutations. It had earlier, I believe, been known that the *frequency* of occurrence of mutations in Drosophila could be influenced by external circumstances.

Harrison had noticed that melanism was common in moths in industrial and smoky areas. Now, living in a smoky atmosphere makes a moth dingy, but doesn't make it black. These melanic moths, however, are quite black. Harrison took a colony of the normal-coloured non-melanic individuals from a distant rural area and divided them into two groups: a control group and an experimental. The control group was fed in the ordinary way. The other group had certain metallic salts sprayed on its food, salts which occur in the atmosphere of smoky industrial areas and are deposited on the leaves of the food plants of the moth. Those thus fed did not *turn* black. They did not *acquire* that character. But among

their offspring, after a few generations, occurred one or two black mutations, a phenomenon which was absent in the control group. And the blackness thus produced was then found, on mating, to act as a simple Mendelian unit, usually recessive to the normal colouring.[1] Harrison has since repeated and confirmed his experiments under different conditions, and if they are fully confirmed by others it would seem that we have here a case where we see an environmental condition modifying the gametes of an individual so that his offspring contain a mutation which neither he nor his ancestors have ever shown. Other species have been tried with similar results.

Harrison has also repeated and confirmed the work of Durken and of Brecher, who found that the pupæ of a certain butterfly acquired under the influence of orange light a green colour, which was inherited, though it is not clear from the experiments *how* it was inherited. And in one case, that of an egg-laying instinct, Harrison claims to have given a direct demonstration of a true Lamarckian effect—that is to say, the inheritance of an acquired character in the ordinary sense. In any case, as he says, if the germ-plasm can be influenced in the way shown by his melanism experiments, the step to admitting the possibility of Lamarckism is slight.

The situation, therefore, as to the influence of the environment on heredity is at present *sub judice*. But it still remains true that the majority of characteristics produced by education in man are very unlikely to have a "shock" influence on the germ-plasm of the

[1] Dominant in one species.

inheritance mechanism, such as may be guessed at in the above cases, and therefore for our purposes it is still true that most of our cherished qualities have to be produced by education afresh in each generation.

All these details will, I hope, have given the impression that a great deal is known now about the mechanism of heredity, that those who are engaged on the work can to a surprising extent modify and change species by selective mating, and that environment, though its exact power is doubtful, appears to have extraordinarily little to do with the nature of the new individual, which to a far greater extent is determined by the genetic composition of his parents.

In articles and books on heredity, human pedigrees can be found for a number of qualities, which look uncommonly like these Mendelian pedigrees.[1] In some simple qualities, as eye-colour or certain malformations of the digits, Mendelian inheritance has been proved in man. In others, as in feeble-mindedness or albinism, it is strongly suspected, though the mechanisms are complex and perhaps several factors are involved. Davenport and others have also given pedigrees in which they have endeavoured to trace as unit characters such qualities as artistic genius, musical genius, or a proclivity for the sea. Such pedigrees are as yet too dependent on subjective judgment in the decision whether or no an individual exhibits the character in question, and in any case such qualities seem unlikely to be units. Yet I have myself little doubt but that in the course of time not only the

[1] E.g., in Crew's *Organic Inheritance in Man* (Oliver and Boyd, 1927), pp. 184 ff.

physical but the mental qualities of man will be shown to be made up of a number of unit factors combined and linked in numerous but not untraceable fashions, and that we could if we wished breed different kinds of men as we have bred different kinds of dogs or of cattle. Doubtless, also, we never shall do so.

CHAPTER VIII

THE SOCIAL INHERITANCE

"But let not indolence, under the false appearance of gratitude, persuade thee to rest contented with her presents. . . . Behold this artizan who converts a rude and shapeless stone into a noble metal; and, moulding that metal by his cunning hands, creates, as it were by magic, every weapon for his defence, and every utensil for his convenience. He has not this skill from nature; use and practice have taught it him: and if thou wouldst emulate his success, thou must follow his laborious footsteps."

HUME, Essay XV, *The Stoic*

"And yet if anyone thinks that those in whom Nature hath not thoroughly done her part may not in some measure make up her defects, if they be so happy as to light upon good teaching, and withal apply their own industry toward the attainment of virtue, he is to know that he is very much, nay, altogether, mistaken. For as a good natural capacity may be impaired by slothfulness, so dull and heavy natural parts may be improved by instruction."

PLUTARCH, *Discourse Touching the Training of Children* (*Monroe's Source Book*, p. 308)

"No delusion is greater than the notion that method and industry can make up for lack of mother-wit either in science or in practical life."

T. H. HUXLEY

"The difference of natural talents in different men is, in reality, much less than we are aware of; and the very different genius which appears to distinguish men of different professions, when grown up to maturity, is not upon many occasions so much the cause as the effect of the division of labour. The difference between the most dissimilar characters, between a philosopher and a common street-porter, for example, seems to arise not so much from nature as from habit, custom, and education."

ADAM SMITH, *The Wealth of Nations*, Book I, chap. 2

I HAVE tried in the previous chapter to impress my readers with the importance of biological inheritance, the

immense influence of pedigree in determining an animal's anatomical and physiological features, and, indeed, man's mental features also. But before making the attempt to discuss whether the latter is true, and our minds as dependent on our genes as are our noses or the colours of our eyes, I want to turn aside from biological inheritance altogether and discuss the importance of social heredity. For I might otherwise be rightly accused of emphasizing only one side of the question and ignoring another.

Social inheritance is not heredity at all in the sense in which we have hitherto used that word. By heredity is meant in the biological sense an influence which comes from the ancestors to the offspring through the gametes or sex cells which create that offspring. By social inheritance is meant the influence which one generation, and all the preceding generations through their works and books, exert on the new generation. Clearly, education is part of this social inheritance, or its chief weapon.

If all the children of Scotland were transferred at birth to certain Departments of France, and all the children of those Departments transferred to Scotland, then the Scottish children would have their biologically Scottish heredity, but their social inheritance would be that of France, while, *mutatis mutandis*, similar statements would hold of the French children transferred to Scotland. In very many ways the transferred children would grow up in the likeness of the country of their adoption, being moulded by its social dowry.

There would doubtless be some anatomical or facial features which might be noticed by a visitor to either country later, for it is possible and, indeed, probable that

in stature and colouring the two sets of children would show differences from truly native children. The possibility of this becomes clear when we imagine a similar experiment in which children of a quite different race, say negroes, were concerned.

Whether more subtle differences of temperament or of intellect could also be noticed is a moot point, and one on which a little light will be thrown by some recent work, which will be described later in this book. An experiment such as the above cannot, of course, be carried out, although situations very similar might have been observed in past history during the wanderings of the peoples, or even in the migrations which followed the Great War. But experiments of essentially the same kind are constantly occurring when children of one ancestry are adopted by foster-parents of another, and it is cases of this kind that the experiments just alluded to deal with.

Even if one admits, as the experiments referred to force one to admit, that there would be some signs of the biological ancestry of the transferred group of children in their after-life, yet there can be no doubt that the transfer would make a tremendous change in them. On the whole, heredity or no heredity, the children brought up in France, subjected to a French social inheritance, and ignorant of their real ancestry, would be French. Studies of the mechanism of heredity force one to the conclusion that education cannot do everything. But considerations like the above force one equally to the conclusion that it can do a great deal within the limits set by heredity.

Now I will ask you to imagine a more difficult transfer. Imagine children taken away from their Scottish social

environment and not merely transferred to another, different environment, but transferred to a situation in which there would be no social inheritance whatever. They would have only their biological heredity. It is not impossible to imagine means by which the period of complete dependence during babyhood could be overcome, say, by suckling by wild animals—as were Romulus and Remus, and Mowgli, in tradition and story. And a kindly climate might be imagined in which the toddlers might survive after babyhood and live on the abundant fruits of a protected island. Novels of the sort have been written.

It may be predicted with some confidence that such children mentally would simply not develop as human beings. I have very little doubt but that their various inherited I.Q.'s would show themselves in individual differences. But they would show themselves in variations round a mean which would be at a totally different *niveau* from that to which they would have risen had they stayed in their original homes. The average of mental behaviour would be hardly human; they would almost certainly fall below the performance of the most primitive savages. In a few generations, if they were granted a continuance of the happy conditions which would enable them to live in the same habitat, they would begin to accumulate a beginning of social tradition. A language of sorts would arise. If they were of good original stock they would, perhaps, in a few centuries struggle out of savagery into barbarism. But how long would it be, do you imagine, before they achieved the use of bronze, the invention of writing even in pictures, the ability to make an arch, or to

control electricity? And yet they might originally have had among them the children of the leading engineers, scientists, and inventors of the day. They were suddenly cut off from their social inheritance.

Tarzan of the Apes, improbable a story as it is—it is the first of the series I refer to, where Tarzan educates himself; I have not read the others—nevertheless illustrates some of the points of the case. The writer did not cut Tarzan off entirely from the social inheritance of his kind. Instead, he imagined the hut full of child's picture story-books, alphabet sheets with illustrations, and the other apparatus of the nursery. That Tarzan should obtain access to this by manipulating the catch of the door, which was beyond the powers of the apes, is not wildly improbable, for intelligent apes show differences in opening catches, and he would be, with his brain, a very intelligent "ape". The great lack, which would in actual practice have prevented Tarzan's mental development, was the lack of heard language, as anyone who has attempted to teach deaf children reading *ab initio*, when they not only do not know the symbols but have no words of any sort, will realize.

What does the social inheritance consist of? Firstly, it consists of things which we see around us—houses, clothes, roads, books, machinery. The island children we have been imagining had nothing whatever of these things to guide their groping civilization. They had to start absolutely *de novo*.

Secondly, it consists of a tool of thought, the mother-tongue, which calls the young child's attention to the things of the outer world, classifies them for him in a

ready-made classification which his forefathers have found useful, names relations between them, and even names relations between those relations. An organized machine for conceptual thinking is presented to every child of a community, his mother-tongue—and the children we have been imagining were cut off from that also.

Thirdly, it consists of organizations, institutions, and communities among the adults, into whose society the young child is growing. These educate him by compelling or inviting him to become a part of those institutions. It is easy to grow up into the traditional society; it is easier, even, to be a revolutionary after we have grown up into a society, than it would be to create a new form of society and new institutions in the community of socially disinherited children whom we have been considering. It might at first sight seem easier for a child who has grown into no prejudices to make a new start, than for the child who has spent his susceptible years in an already closely organized society. And so in a sense it is. But the new start would be a new start at a point in history millions of years ago. Even the revolutionary has learned what he wants in his new world from the society which he wishes to overturn.

As an illustration in some measure of the importance of social inheritance I would ask you to consider the case of the deaf and dumb, the condition of whose minds and the consideration of whose difficulties is extremely illuminating for educators. As Dr. James Drever very penetratingly said in a recent account of his psychological experiments among the deaf, the handicap of the deaf child lies not so much in the fact that he is born deaf as

in the fact that he is born into a community of people who hear. Had everyone always been deaf our civilization would have developed along lines which could be appreciated by the deaf child. A tool of relational thinking dependent upon sight alone would no doubt have been developed, and although it might not have proceeded at the same rate of evolution as has the kind of language with which we are familiar, yet sooner or later it would undoubtedly have come to be able to express subtle relationships and to have a grammar and a syntax. But this, and all other achievements of civilization, have been in actual practice developed by hearing people with whom the deaf child can only come into partial communication. Even were he surrounded by other deaf children in like case, he might be better off in a few generations. But he is an isolated unit until he goes to a special school. We have no need to ask ourselves whether hearing children cast on a desert island at birth and miraculously preserved would invent a language. We have continuously before us the case of children who have to be taught our language in an artificial manner through sight, or in a still more artificial manner through the feel of the vocal organs. There has never been a genius of a deaf child who invented a language with the conceptual subtleties possessed by even the poorest savage language. The meagre sign-language —I am not speaking of the finger-spelling which they learn from us—which deaf children come to employ is many times poorer in relational power than any known language, even that of the Australian blackfellow, I imagine. The deaf child has been cut off from a large part of the social heritage of mankind.

I tried in the preceding chapter to impress on my readers the power of heredity in the biological sense. I have equally tried to emphasize the power and importance of the social inheritance which comes through contact with preceding generations, and with their visible works, their institutions and organizations. It is impossible to consider the one without the other.

To stress heredity does not, therefore, mean that education is belittled. Improvement in education cannot iron out inherited differences in men, but it can raise enormously the *niveau* above and below which those differences show themselves. As Thorndike says in his *Educational Psychology*: "We may even expect that education will be doubly effective once society recognizes the advantages given to some and denied to others by heredity. . . . To the real work of man for man—the increase of achievement through the improvement of the environment—the influence of heredity offers no barrier. But to the popular demands from education and social reforms it does. . . . In the actual race of life, which is not so much to get ahead as to get ahead of somebody, the chief determining factor is heredity."

"But the prizes which education ought to seek are all within its power. . . . For the common good it is indifferent *who* is at the top, *which* men are achieving most. The important thing for the common good, for all men, is that the top should be high, that much should be achieved. To the absolute welfare of all men together, education is the great contributor."

. . . . .

But some of you may have been saying—or if you have

not, then at any rate many others have said—that it is a far cry from the kind of quality which is known to be inherited biologically, perhaps in a Mendelian fashion, to the kind of quality in which we are chiefly interested as educators, to assiduity, kindness, honesty, insight, intelligence, abstract thought. And so I will turn next to the inheritance in man of one of these, intelligence, and to the latest experiments on the relative influence of nature and nurture on this quality.

There have been numerous experiments directed to disentangling these two types of influence on intelligence, but I will disregard all those of the past—by Galton, by the Biometric Laboratory headed by Professor Karl Pearson, and by other well-known writers in England, America, Germany, and elsewhere—and call attention only to the most recent which have just been published in the 27th Year Book of the (American) National Society for the Study of Education.

This two-volume publication consists of a number of monographs on the relative influence of environment and heredity on either intelligence or school achievement, with an editorial commentary which welds the whole together. Definite results of experiment alone are reported, and mere opinion kept out—or at any rate, carefully labelled as such. The verdict is not unanimous, but the general conclusion drawn by the editors, that nature is more potent than nurture in the production both of intelligence and achievement, is borne out on the balance of evidence.

The paper which is, perhaps, most opposed to this general conclusion is that of Freeman, Holzinger, and

Mitchell, on "The Influence of Environment on the Intelligence, School Achievement, and Conduct of Foster-Children". These investigators followed up, in the first place, two children of a family, of whom one remained in its own home while the other lived in a foster-home. Usually the heredity was poor, and the foster-home superior as an environment to the real home. It is not easy to find many cases of such separated children, because when children are placed in foster-homes their own home is frequently quite broken up and so no siblings remain behind to form the comparison group.

In the second place, therefore, siblings of the same parentage were followed up, who had been placed in different foster-homes. In doing this, care had to be taken to guard against the possibility that those responsible for placing the children might have chosen the brighter children to send to the homes of the more intelligent foster-parents, whose houses were usually places of greater culture. That is to say, selection, and not the influence of the home, might explain any correlation between the superior home and superior intelligence.

Thirdly, foster-children were compared with the true children of the foster-parents brought up in the same home, a case of the same environment with different heredity, whereas the first and second sections of the research were concerned with the case of the same heredity in different environments.

The conclusions which these authors came to are set out in their paper, and it would be a mistake to give them in detail here. But it may be said that careful statistical handling of the data was ensured, and many subtle,

possible errors, such as the selection fallacy mentioned above, were guarded against as well as might be. On the whole, their results showed a very considerable influence of the environment. The foster-children in good homes improved in intelligence more than the others. Siblings reared in different foster-homes correlated in intelligence less than do siblings brought up in the same home, though they still did correlate. Unrelated children brought up in the same home correlated in intelligence, though not so much as do true siblings brought up in the same home. A correlation of the intelligence of the foster-children with an estimate of the cultural status of the homes of adoption, made before adoption, showed a result of 0·34, indicating that there had been the selection that was mentioned above. But this correlation was raised to 0·52 by residence in the adopted home. And so on. This research, taken alone, might be summed up by saying that heredity and environment seem to have about equal influences.

Most of the other papers, however, give results which assign a larger share to heredity and less to environment. One by Miss Barbara S. Burks, for example, does so, and the suggestion is made in a comparison that the admitted selection of the children to suit the homes, noted by Freeman and his colleagues, together with the comparatively late age of adoption of the children they are dealing with, explain the discrepancy between their work and the other. In Miss Burks's research the average age of adoption of the children was only three months, which not only means that the influence of the foster-home is more solely the environmental influence at work, but almost com-

pletely abolishes the other objection of selection to suit the home, for at three months it is perhaps not entirely impossible but certainly very difficult to make estimates of the intelligence of the babies.

The statistical side of Miss Burks's paper is very good, and indeed in every way there appears to be little reason to doubt her main conclusion, that only about 17 per cent. of the *variability* of intelligence is due to differences of home environment. True, the best Californian home environment may, in a few cases, enhance the intelligence quotient by about 20 points above the usual home environment there. But heredity accounts for differences of as much as 100 points of I.Q., five times as much as environment. It must not, of course, be assumed by the reader that the whole of Miss Burks's argument is summed up in this very short extract; and to guard to some extent against such a misconception of the extent and accuracy of her work, it is perhaps worth while explaining the method adopted in a few more sentences, as well as may be.

The general plan of inquiry was to correlate (1) true children with their true parents, and (2) foster-children with their foster-parents. Clearly if heredity is the main factor the former correlations should be high and the latter zero, whereas if environment is the main factor the correlations should be equal in the two cases. Both the true parents of the control group and the foster-parents of the other group were white, non-Jewish, American, British, or North European born, and so also were the true parents of the foster-children, as far as this could be traced or inferred. The children were all legally adopted, and not merely in a less responsible relationship to the

foster-parents. Great care was taken in equating the control group and the foster-group in every relevant point that could be conceived of. The Stanford-Binet test was used in obtaining the mental ages of both the parents and the children, and various other measures and observations were recorded, including an assessment of the home conditions by means of the Whittier Scale, and of the cultural conditions of the home, separately, by means of a special scale devised for the purpose, based on such matters as the speech of the parents, their education, the size of the home library, the artistic taste apparent in the home, and the like. Probably the following table best sums up the quantitative side of the work:

Correlations of Child's I.Q. with	Foster-Group		Control-Group	
	r	N	r	N
Father's M.A.	0·09	178	0·55	100
Mother's M.A. ..	0·23	204	0·57	105
Father's vocabulary ..	0·14	181	0·52	101
Mother's vocabulary ..	0·25	202	0·48	104
Whittier index	0·24	206	0·48	104
Culture index	0·29	186	0·49	101
Income	0·26	181	0·26	99

With one exception these correlations are, in the control group, all of the same size (0·5) as has repeatedly been found for physical qualities susceptible of exact measurement. The correlations of the control group are much higher than those of the foster-group, indicating that environment is by no means the only influence causing the mental resemblance of children and parents. On the

other hand, the correlations of the foster-group are not zero, so that environment is also playing a part. It should be explained that correlation coefficients are by no means simply proportional to the importance of causes which produce the correlations. It should not, for example, be thought that because the foster-group correlations run at about 0·25, and those of the control group at about 0·50, that therefore environment and heredity are supplying in the latter case about 0·25 of correlation each, thus making up the whole 0·50. The causal interpretation of correlation coefficients is a subject beset with many pitfalls, but, roughly speaking, and overlooking the many provisos which would really have to be made, it can more correctly be said that the influence of the causal factors is in proportion rather to the square of the correlation coefficients than to the simple coefficients. Thus environment plus heredity, in giving the result 0·50, have perhaps four times the influence of environment alone, as shown by the other value 0·25; four being the proportion which the squares of these bear to one another. The exact statistical analysis of all her data, however, should be sought in Miss Burks's own paper, of which this is only a very inadequate and popularized account.

With regard to character and personality traits, the conclusions are much less decisive and reliable, but the data seem to suggest that here the influence of the environment is possibly greater.

. . . . .

What is called the Development Theory of education has often been held by thinkers on our subject in all centuries; but more particularly since Rousseau and

Pestalozzi. The former, who would leave all to Nature, was rather confused as to what exactly he meant by Nature. In part he meant the simple life of the country as contrasted with the city; but in part he certainly meant heredity. The theory received its best advertisement from Pestalozzi's analogy between a child and a tree planted near fertilizing waters, and from Froebel's institution of the Kindergarten. The theory did not speak much or at all of individual differences in the potentialities which were to be drawn out of the child, or allowed or encouraged to develop, it emphasized the common human powers which were to grow naturally in a natural environment.

There is much in common between this theory, put forward by thinkers who were not biologists, and the ideas expressed in the preceding chapter on heredity, but there are also important points of difference, which depend on the great contrast, in degree if not in kind, between physical and mental development. Both theories conceive of possibilities inherent in the embryo, which are to develop, if the medium is favourable, into already determined qualities in the adult. The modern theory of development and heredity, as far as it concerns physical characteristics, agrees that the "gardener", or the person who tends some growing animal, cannot do more than supply nourishment and opportunity for suitable exercise, cannot hasten appreciably or otherwise than by giving better food or lodging, the emergence of the various physical characteristics proper to the successive ages and stages of the organism, or modify them in any fundamental way except by breeding.

But as regards mental qualities, both temperamental and intellectual, modern biology would make very modest claims. It would not allow that an educator could change the colour of a child's eyes by education; it would allow that much could be done with stature and physique, but only in the sense of the development theory, that good conditions would permit the predetermined possibilities to reach their limits, though these limits would remain different for different individuals; and although it would grant weighty powers to the educator and to the environment in matters of temperament, ability, type of career, etc., it would even here consider that there were limits set by the germ cells, so that one child would be more and another less likely to become a rover and adventurer, a second child to grow into an artist or a factory manager.

The fact is that the possibilities are so much wider in the mental sphere, that to speak of letting potentialities develop without in the same breath saying in what medium,[1] is most misleading, so different are the developments of the same potentiality in different societies and with different mental pabulum. An attentive gardener will produce a large and well-formed carnation, a careless

[1] Compare Krieck, *Philosophie der Erziehung*, pp. 21 and 46: "This alleged development of childish nature to blossom and fruit would give an unspeakable picture of mankind: a confused, unorganized hurly-burly of individuals without understanding, co-operation or community. Those of similar nature would be scattered over the face of the earth, while among neighbours Babylonian confusion of speech and universal conflict one with another . . . would be the normal form of life."

"An automatic development of the individual man, completely unformed and uninfluenced from without, as the psychological theory of development presupposes, is a sheer impossibility, a monstrosity of thought."

gardener a starved and poor carnation, and an ignorant gardener perhaps no carnation at all, from the same seed, but they will all be carnations if anything grows at all: whereas a baby, though it doubtless always grows physically into a man or woman as the seed grows into the carnation, yet depends upon the mental world which surrounds it for its mental growth, in a manner which may turn it into what are mentally quite different human animals, as if the carnation, given mathematical manure, might become a lily, or watered by a classical watering-pot, a rose. Or if the reader thinks, probably rightly, that the differences between a classical man and a Wrangler are not of the same order as those between lily and rose, let him imagine the same brain growing from the birth of its possessor on a lonely island, in ancient Babylon, in a log cabin, or in modern London. In the log cabin or on the island one might speak of merely starving the mind which would accompany that brain, perhaps. But neither in ancient Babylon nor in modern London need we imagine mental starvation, yet how different the minds might be which resulted. Though even as I write this, the similarities begin to strike me rather than the differences, the touch of nature which makes the whole world kin, and I consider how possible it has always proved to get into communication with the minds of other nations, even of nations newly discovered and resulting from thousands of years of different development, as in Mexico or Peru. After all, great as are the differences which I am here emphasizing, due to different mental surroundings for the growing mind, they are not as great as one might conceive of occurring by means of

hereditary genetic changes. Suppose there had developed, in different parts of the world, *two* sorts of intelligent creatures, as different physically as men and horses, and not merely different species of men all capable of interbreeding, and all understanding the human mind. The thought is appalling.

However, to return to our main argument, what we have done so far is this. We have seen, in the last chapter, something of the wonders of genetic study, and appreciated that human beings differ from one another in certain original determiners which either are or are not present at birth, and which settle the possibilities of many physical qualities such as colouring, stature, keenness of sense organs, activity of glands, and what not, and almost certainly settle the nature of the nervous system with which the individual is endowed, and upon which his intellectual powers so much depend. On the other hand, the consideration of imaginary children brought up in the absence of the usual social inheritance leads us to appreciate the importance of the latter in developing those intellectual powers, and producing also those traits of civilized as opposed to savage character which distinguish man. We are disposed, therefore, to believe that not only heredity, but also social training and education, both incidental and purposeful, have their say in the production of individual differences of ability and character. Passing over older experiments to determine the proportions in which these two influences act, in the actual differential conditions of modern society (experiments which can be read of under Heredity in any good and recent encyclopedia) we spoke of certain quite recent experiments of

this sort, which suggested to their makers that the influence of heredity outweighs the actual present social differences found in (American) society in the proportion of about five to one. The complete equalizing of social and educational opportunity, therefore, if this be true, would still leave us with nearly the same range of individual differences as to-day. But this does not mean that improvement of educational opportunity might not very greatly raise the average about which these differences distribute themselves. Lastly, comparing these ideas with the older theory of education, known as the Development Theory, we reminded ourselves that not only did the educator possess the power of raising, by good education, or lowering, by bad, the general intellectual level of his age, but that there was no question of some predetermined sort of civilization simply developing because children grow up. What is developed mentally is in quality, as well as in intensity, a function of the social and intellectual environment; and the educator has a very considerable amount of control over this quality, so that the schools may make a people commercial minded, military minded, religious minded, scientific minded, may encourage and, indeed, create a progressive or a reactionary atmosphere, and mould a nation.

As to the degree to which the present amount of school attendance is requisite to obtain these results, we have no definite data. Proverbially, it is the first seven years of life which count, and the school has only one or two of those years. But on the much easier problem of the amount of schooling necessary to give the present amount of facility in the elementary school subjects, there have been

investigations published, of which the most recent, at the time of writing this, is the second volume of the above-mentioned Year Book, wherein the relative importance of nature and nurture in producing school achievement is discussed. In that volume attention may be called to two papers by Dr. J. D. Heilman and Miss Katherine M. Denworth, each of which forms a kind of modern version of the research which Professor Cyril Burt carried out in an English school on this question, which was summed up in a so-called "regression equation" which has given rise to a good deal of rather controversial discussion. Burt's immediate point was that, in his opinion, as a result of that research it could be said that the series of intelligence tests devised by Binet did not measure only native intelligence, but to a considerable extent were a measure of acquired school training. That, of course, might be said merely by way of justifiable criticism of the tests, with a view to their improvement in the direction of more exactly measuring purely native intelligence; or it might be held to imply that intelligence was necessarily compounded of the two factors. At all events, the conclusion was assailed by American psychologists, whose criticisms were on the whole justified, though I consider that they were rather too ready to turn a not-proven verdict into a reversal of the verdict.

The main criticism was that, although a regression equation shows the existence of a causal connection between the things measured, it does not show in which direction that causal connection works, so that instead of saying that schooling caused intelligence, one might equally well say that intelligence caused success at school-

ing. And a second weakness which was pointed out, and which is necessary to make the former criticism sensible, is that by schooling, Burt did not mean length of attendance at school, but merely the standard of success which had been achieved there.

Without entering further into this controversy, which in any case now has only a historical interest in view of the new researches, we may turn our attention to the latter. Dr. Heilman's paper and that of Miss Denworth are so similar in their methods and results that a general description will serve for both, taking actual details from the former. Heilman measured or discovered for each of 828 children the following quantities:—

Educational Attainment Age, by the Stanford Achievement Test.
Mental Age, by the Stanford Revision of the Binet Tests.
Chronological Age.
Total School Attendance in days.
A measure of the Socio-economic Status of the Home.
Date of first entering School

The last is not further used in the results we are about to quote, and the differences in chronological age, which were not large, were equalized by the device of "partial correlation", which need not be here described. Between the other four quantities Heilman found correlations which gave this "regression equation":—

$$E.A. = 0{\cdot}6711\ M.A. + 0{\cdot}2155\ S.A. + 0{\cdot}0751\ S.E.S.,$$

or in words: the educational attainment of a child can be best predicted, in default of a direct measure, from its mental age (M.A.), with only slight reference to the

total school attendance (S.A.) and hardly any reference to the socio-economic status (S.E.S.) of the home. Miss Denworth's results, which were carried out in another part of America, were almost identical.

The editorial note prefixed to Heilman's research says: "It shows beyond reasonable doubt that not more than 5 per cent. of the variability in school product found among children of the same age in ordinary communities is due to differences of educational exposure." The editors draw the conclusion that to deny school promotion to children solely because of absence is unjust and taxes school facilities unduly, for children tend to attain a proficiency in school subjects close to that appropriate to their mental age in spite of absences. We are reminded, they say, of Breed's experiments with chicks prevented from learning to peck during the first week or two of life, which when released became almost immediately as proficient as the others. And they finally question whether eight years of school attendance is really necessary to bring pupils up to the standard usually achieved by the eighth grade, or whether they would not do it equally well between ten and fourteen.

I imagine that few teachers in the United Kingdom will feel inclined to admit the accuracy of this last statement under British conditions, or to believe that they could with equal success prepare their pupils for the English School Certificate, or the Scottish Leaving Certificate, if they did not begin till ten years of age, even if they are followers in other respects of Rousseau, who would heartily have agreed. And although they certainly have never tried the experiment, and to that extent are

not entitled to assert the contrary, yet many of them are acquainted with cases of school children who for various reasons have missed some of the earlier years of schooling and have had great difficulty in making up the leeway. A partial reply even to these cases would be that our schools are not organized to care for such children, and that it would be a very different matter if everyone started off at ten.

However, accepting the American results at their face-value without question, educators have no need to be unduly depressed. It is not suggested that schools are unnecessary before ten, only that there is no need for them to teach the three R's before that age. If that be so, even in part, those who believe in methods which avoid drilling in the elements of those subjects and leave them to be learned through their necessity to projects which the children are carrying out, will be cheered, and will demand a postponement to fourteen of any measurement of the results of their methods as far as the three R's are concerned. For the rest, schools would still be needed to give that training in character which the modern home, at any rate, cannot give, and to watch over and give mental food to the developing intelligence, in which process they would find it difficult to do without reading, at least.

CHAPTER IX

POPULATION AND EDUCATION

"But", said Idomeneus, "when the people shall be thus blessed with plenty and peace, will not their happiness corrupt their manners?" . . . "There is no reason to fear that", said Mentor; "the laws which we have established with respect to agriculture will render life laborious; and the people, notwithstanding their plenty, will abound only in what is necessary, for we have prohibited the arts that furnish superfluities: and the plenty even of necessaries will be restrained within due bounds by the facility of marriage and the multiplication of families. . . . They will have bread, indeed, and they will have bread enough; but they will have nothing more, except what they can gain from their own ground by the sweat of their brow."

FÉNELON'S *Telemaque*, Book XII, Hawkesworth's translation

"Not the thin virtue of prudence, but the strong urge of a whole mode of life, has intervened. It has interposed, between civilized man and the terror of Malthus, a barrier exactly as high as the height of his civilization."

R. M. MACIVER, in *The New Republic*, December 2, 1925

THE density of population of a country, and the educational system of that country, affect one another in several ways, which it is the object of the present chapter to consider. In a very sparsely populated land, school education is liable to be backward, though the conditions of life in the country may afford an excellent training in character. For in such a country there is likely to be little wealth, except perhaps in the hands of a few individuals, and so little provision of school buildings, and, what is more important, little provision for the salaries of well-educated teachers. These difficulties are magnified by the impossibility of bringing together more than a few children in one place, for whom a teacher has to be provided who

could in other circumstances have taught several times that number. And further, small one-teacher schools are necessarily inadequate for some of the children, since the teacher, if a woman, is unsuitable for the bigger boys, and if a man, is unsuitable for the infants and the older girls. Apart from these obvious instances of unsuitability, it is also clear on consideration that no teacher can be equally enthusiastic and capable in teaching infants, juniors, seniors, and advanced pupils. In a large centre of population, on the other hand, a school can be of such a size that children of different ages can be arranged in suitably sized classes with a teacher whose training and interest fits her for that particular work. The distances which the children have to walk to school are much less, and fatigue is thereby obviated and a source of bad attendance removed. In such a school there can be a much better provision of books in the school library, and of other apparatus. There are more children of one age to form teams for school games, and there are schools within reach to provide friendly opponents and encourage *esprit de corps*.

There are, of course, numerous examples of clever children, who became well-educated men, coming from sparsely populated areas, and some such districts have even established a reputation for the very highest school achievement, as, for example, certain Highland districts of Scotland; while the products of some "log-cabin" schools of pioneer America also occur to one's mind. In both these cases, however, there was probably very good stock to draw on, and Scotland had the advantage of a tradition, dating back at least to John Knox, that the village dominie should be a well-educated man whose office gave him a

social distinction second only to that of the minister. Indeed, the Scottish ambition to enter the ministry probably led to a supply of suitable teachers, for not all could attain the full extent of their ambition.

There is also the other side of the picture. The rural child has more natural surroundings for play, and sees a simpler community which he can readily comprehend and in whose work he can take a more obviously useful part. He ought to enjoy fresher air and more wholesome food than his town cousin, though it must be confessed that country people often fail to take advantage of their opportunities in both these respects. There is also something to be said for the private study necessarily forming a considerable part of the school-day in a one-teacher school, since the teacher cannot always be teaching all the children of such different ages and attainments. Two decades ago it was one of the chief faults of the teachers in a classified school that they taught so much and so continuously that the children had no time to form habits of study, but merely formed habits of being taught. There is, nowadays, less justification for this particular criticism of town teachers.

To some extent in Scotland, and to a very considerable extent in America, there has been an attempt to counteract the disadvantages of the sparsely populated areas by a policy of consolidation of schools, by which a number of small one-teacher schools are abolished and replaced by a large classified school in a central position, to which the children are taken by rail or motor transport. Scotland and England have long tended to this solution in the case of the secondary education of the older children (over

twelve), who have been required to travel to the county town or other centre, and for whom in Scotland there has been for many years a provision of hostels so that the state secondary schools became, in fact, boarding-schools. But the coming of motor transport has made a great change in the possibilities, and it may, I think, be predicted with some confidence that there will be very considerable concentration in the next quarter-century. For some places, of course, the one-teacher school is almost inevitable. I am, for example, writing this on the side of a "Voe" or fiord in one of the northernmost islands of the Shetlands. On this side of the Voe there is a one-teacher school, on the other a two-teacher school. The advantage of combining these would be slight, and the difficulties of communication in winter very great. To get a school of a size likely to produce considerable economy and increase in amenities such as library, laboratories, gymnasium, clubs, etc., would require the combination of the children of several Voes, and this, under the conditions likely to prevail for a long time, is obviously impossible. Similarly, there are many parts of the Highlands, and many parts, indeed, of England, where transport would be difficult, quite apart from the artificial difficulty in England caused by the "non-provided" schools—that is, the schools of the religious denominations, which, of course, resist amalgamation with those of other denominations or of none. The policy has been most successful in the level middle-west of America, where the roads are straight and regular, and where the whole population is nowadays very accustomed to automobile travel. The consolidated school may be actually nearer in time to the children's homes than were

the "little red school-houses" to which so many of the older generation are somewhat sentimentally attached. Where the road system is simple the children need only walk to the nearest cross-roads, and the buses used are heated in winter. Some such schools have their own garages, in some cases teachers drive some of the cars themselves, and the whole affair is much more possible, and much cheaper for the results obtained, than trials of motor transport have proved to be in England, where on the whole the price is still prohibitive: though how anything can be less economical than running tiny schools with expensive teachers it is difficult to understand.

Not only the present density of the population, but also its rate of change, affects the adequacy of the educational provision. The most striking instance of this was the nineteenth century, when population in Great Britain was increasing by leaps and bounds for reasons which are not yet, I think, quite clear. That rate of increase was not the only reason for the scandalously inadequate provision of schools, but it was one of the main reasons. Even to-day some districts, where population is increasing rapidly (especially when the increase is due to movement into the district), find particular difficulty in coping with the educational requirements, especially as regards suitable buildings. Where, on the other hand, the population is decreasing—as in many of the rural parts of Scotland—there are, perhaps, fewer difficulties, but still certain inconveniences. Head masters are depressed by finding their schools becoming smaller and smaller. No new buildings are put up for many years, and although the actual size of the existing buildings is adequate enough—

indeed, excessive—they become very much out of date as far as architectural improvements are concerned. In such a situation, a district which is progressive may, on the other hand, make much of its empty classrooms by using them for silent study, for libraries, for pupils' clubs, etc., and may find whole schools which can be emptied and converted into technical institutions or trade schools or the like.

The whole of social progress is intimately bound up with the population question, and one of the ways in which education has affected and will affect social progress is by the influences which it exerts on the growth and movement of population. It is now a century and a quarter since Malthus propounded his theory that the reproductive instincts in man are sufficiently strong to cause population always to fill a country up to its temporary limit of direct or indirect food-production, from which the first and pessimistic deduction is that there is no hope of mankind ever attaining comfort for all, because he will always multiply until there is bare sustenance for all. The Victorians of the nineteenth century, finding, however, that their population was growing by leaps and bounds, but that prosperity was also growing—though certainly there was very unequal distribution—came to the conclusion that Malthus was wrong. Probably it would be more correct to say that they did not give Malthus a hearing.

It is clear that the capacity of a country to support a population is not a simple fixed thing, but that it is itself a function of the size of the population. There are some resources of a country which cannot be tapped at all until

the density of population has reached a certain value. Moreover, not all kinds of men can live in equal numbers on the same piece of country. Some demand a high standard of living, others are content with a low standard. The former check their rate of growth long before the latter do so, by later marriage and by restriction of the size of the family. There need not be a conscious determination to lessen the rate of population increase, the method of the matter is more natural than that. The people with the higher standard of living take longer to accumulate enough to justify them in marrying; therefore, they marry later. I do not mean that they are slower in rate of accumulation—indeed, the contrary is true—but that they need more before they feel able to marry. Moreover, their higher standard of living includes culture and education, and they pass through a longer schooling, including, perhaps, a university education, before they begin their life-work, which also delays marriage. Similarly, their educational and other ambitions for their children cause them to hesitate in having more children than a small number. The limit of supporting power of a country, therefore, is a function of the standard of living of the people inhabiting it, and the check on population which that supporting power exerts operates sooner with those whose standard of living is high. They are, on the other hand, likely to be the people who will be able by their intelligence and co-operation to develop resources which might have gone untapped by the lower standard race. The whole business is evidently very complex.

Clearly, however, education has a good deal to say in the matter. For the effect of education is always to raise

the standard of living, to make man less content with a mere existence. It also enables the community to draw upon more of its natural resources, to use inventions, to export manufactures and import luxuries. These two actions are in opposed directions as far as the supporting power of a country is concerned; but apart from the actual discovery of new minerals or agricultural possibilities it seems from observation that the former action exceeds the latter in influence, and that the result of more education is, on the whole, to lessen the number of people a country can support at the standard of living to which that education has given the incentive. This is intellectual and æsthetic education. Religious education often includes direct instruction, backed by the most powerful sanctions, to multiply and increase; and such communities, obviously, in so far as they really do follow this teaching, will multiply right up to the misery limit, the actual possible limit of keeping body and soul together. Some communities of certain religions almost do so to-day.

It may appear to the reader that I am rather beating the wind in keeping the two questions of population and of education before his mind so long and without coming to any very definite conclusions. But although he would be right enough in his criticism of the inconclusive and vague nature of my remarks, I believe he would be wrong to turn from the subject without endeavouring to remedy that fault. For I have a strong suspicion that the population question is at the root of most of our troubles in social and political matters, and, indeed, in ethical matters in the widest sense. And since I am an educationist, and presumably my reader also, it appears to me my duty to

strive to see how my own subject is involved in this problem. One of the duties of education seems to me, in consequence of considerations such as are set out above, and continued below, to raise consciously the standard of living of the classes whose children it influences.

I do not mean by this, of course, that it is a duty of the school to encourage a luxurious mode of life. I define a luxury as something we can very well do without, which panders to some lower appetite, and which very easily enslaves us so that we cannot discontinue it. It is sometimes something which is a necessity at certain infrequent times, as in illness or after critical mental periods, but it is usually also something which more than most things cloys with excess, yet weakens resistance to excess. I do not mean "raising" the standard of living by encouraging indulgence in things of this sort. There are, however, other additions to mere living an existence, which are not luxuries, but which yet cost money, require forethought, and distinguish a community which is more humane, more human—that is, more removed from the life of the brute; such as better dwelling-houses, better drains, better food, medical organization, libraries and books, refined employment of leisure, which are the things I mean as a raised standard of living. And please do not quibble about that word "better"; you know what I mean by it, and I am not begging the question. I say that these things cost money, but it must be remembered that luxuries also cost money, even those common and tawdry luxuries, both of dress and amusement, in which classes of a low standard of living indulge, and on which, indeed, they squander enormous sums. But the distinction is that

such things can be in almost all cases purchased in a moment, as soon as some money comes to hand, without delay, consideration, without any sinking of capital (by those purchasing), without education in their enjoyment; whereas the opposite is true in all respects of that better class of additions to mere existence.

The bearing of all this in my mind is chiefly with regard to the duty of education in connection with the problem of the differential birth-rate. For in any country the standard of living is not equal in the different classes and occupations, and this is reflected in different birth-rates in these classes and occupations. The "misery" check of Malthus, changed into the "standard of living" check in the way we have suggested, operates differently on the different layers of society. Now those classes which have the higher standard of living are clearly very likely to include a greater number of individuals who biologically and genetically are superior, for those who possess any superiority of this sort will, not inevitably, but certainly to some extent, tend to climb into those classes. When they arrive there, the standard of living is such that the birth-rate is low, and therefore these superior individuals tend to have fewer offspring, and the race is propagated mainly by individuals who remain in classes where a lower standard of living prevails. Education seems to me to have for this reason (as well, of course, as for other reasons) two duties. It cannot be a cure for the differential birth-rate, to attempt to lower the standard of living of the less prolific classes, in so far as that raised standard depends upon the kind of additions to mere existence of which we have in a previous passage approved; but it may

be a duty of education to ensure that none of the supposed improvements are mere luxuries in the bad sense. And, on the other hand, it is certainly the duty of education to raise the standard of living of the prolific "lower" classes in those more commendable points.

It must not be too hastily assumed that the "higher" and "lower" classes spoken of in these passages correspond exactly with any social stratification of society. It is true, I think, that there is some correlation between what are commonly considered as commendable qualities in mankind—such as the possession of greater intelligence, higher æsthetic taste, more determination, more power of leadership—and social class, especially if one keeps within the great middle class, and avoids generalizations which include the very rich or those of aristocratic birth, in both of which classes very special conditions rule as regards at least birth-rate. But it is still more true that within any one class there are far greater individual differences in all these qualities than can be found between the average men of different classes. And even for men who remain in their "own" class—that is to say, the class into which they were born—there are these differences of birth-rate. This is an aspect of the question of the differential birth-rate which has not yet been very fully investigated.

Some three years ago, Mr. H. E. G. Sutherland began, at my suggestion, some inquiries into the relationship between size of family and intelligence, in the course of which he studied data from a group of 3,000 miners' families, the heads of which were in every case ordinary miners holding no kind of official position which might raise them above the social class of miners. The intel-

ligence of a child of each of these families, aged eleven, was estimated by a standardized intelligence test, and the results were, with suitable precautions, compared with the size of the family to which the child belonged. There was a negative correlation of about 0·14 between intelligence and size of family, not much less than what is found when the parents belong to different social classes. In other words, it seems probable that not only do different social classes have different birth-rates, but that within one social class the more intelligent have smaller families, their standard of what is a proper life and education for their children being higher. It is, of course, possible that the connection between the intelligence of the children in the above experiment is direct, the large family causing lower intelligence because in such a family, in a miner's home, there is neither space nor time for study, instead of the connection being, as suggested, through the intelligence of the parents which leads to restriction of children and is inherited by those children. But in any assembly in which this question comes up for discussion, I usually find as many who are of the opinion that a small family is in itself unfavourable, and a large family favourable, to the development of intelligence. However, it would doubtless be of great interest to have some crucial experiment to decide what is the direction of the causal influence, and in an endeavour to obtain data for such, cases are being collected in which the size of the family is due to the accident of the father's death in the same year as the birth of the child whose intelligence is tested at eleven. Here there is no restriction of family due to intelligence—or at least it is not the main factor in deciding

the size of the family—and if heredity is the cause there should here be less correlation.[1] There are, however, still certain difficulties in the way of a clear decision.

Whatever the cause, the differential birth-rate is important. If it is caused by intelligence and restriction, as I think, it is genetically important; if not, it is still a factor in creating changes in the balance of a nation. I have explained my belief that if the former cause of the differences is the real one, education can help best by raising the standard of living of those classes which still lag behind in this respect, meaning under standard of living those commendable features we have discussed, and not mere luxuries. In this way the change in the birth-rate may be made to take effect more equally over the whole population, and the differential feature minimized. If other causes are at the root, then education no doubt still has a part to play.

But probably more powerful than this differential birth-rate within any country is the effect of emigration and immigration and the really widespread movement of population which is going on over the face of the earth and is likely, I think, to increase, to lead to great political troubles and to wars, and to be the determining factor in the decision what form of civilization and what grade of civilization is to win in the competition.

Emigration affects the culture and education requirements of a country to a much greater extent than may be apparent without thought. In America, of course, the fact is obvious. America's educational problems have always

[1] At the time of correcting proofs it seems as though there is going to be the same correlation here.

been problems of migration. There was the early period, when men of adventurous and often also of religious stock laid great store on the necessity of schools, and numbered among themselves a sufficient supply of persons educated in Europe to provide teachers. Then came the lean years of culture, when the generations educated in the homelands had gone, and the new country could hardly yet replace them. The westward movement brought the difficulties of the lonely home and the tiny settlement, when it is amazing that literacy did not disappear altogether. And now for half a century America has had the task of absorbing large and increasing numbers of emigrants from all the countries of Europe, coming more and more from the districts where settled educational systems do not exist, and in all cases drawn to an ever-increasing extent from the less desirable classes, simply because these latter have in their home countries a larger birth-rate and an earlier age of marriage than the more desirable classes. As we know, America has partially solved this problem, as far as she herself is concerned, by laws which limit the number of each nationality to be admitted annually, based now upon an early census, when the numbers of those already in America, coming from countries which, in the eyes of a majority of American voters, supply more desirable immigrants, were larger in proportion. The consequence has been that the flow from Italy, Ireland, and some other countries has been checked very seriously, while entrants from England, Sweden, and other so-called "Nordic" countries are admitted more freely in comparison. Nevertheless, the absorption of the foreign born remains a chief problem for American education, and the

absorption of the first American-born generation, living in homes which still speak the old language, is only second in importance.

It is in situations like this that one realizes more vividly what a decisive part the mother-tongue plays in forming character and opinion. The problem of absorption is mainly one of language teaching, because through the language come the opinions, beliefs, prejudices, which make up the national character. The same thing is seen in any border country where two languages meet, as in Alsace. And with the language go the nursery rhymes, the childish prayers, the fairy-tales, all the lore of childhood which is the background of the mind. Anyone who has come to speak a second language fluently knows that it is here that he is always liable to be caught tripping. He may be absolutely *fehlerfrei* in his grammar and syntax, colloquial in idiom, and perfect in accent. But every now and then he feels something differently. He does not know about the March Hare's tea-party, or who the *Tintenbuben* are, or the Goops; and he thinks and believes a little differently because his mental life began in this or in that way, and not in some other way. It is the very early years of school-life, and before school the years of toddlerdom, which nationalize a man more than anything else.

Since America made its laws restricting immigration, the tide of human movement has perforce turned elsewhere. Italians flood into southern France, and into South America. Irish go also to South America, and come in larger numbers into England and Scotland, where, according to a recent note in *The Times*, one may see emigrant ships passing one another in the Firth of Clyde,

inward bound with Irish, and outward bound with Scots for America! So other countries than the United States are having their absorption problems, and the comparatively small effect of the differential birth-rate within the country is far outweighed by the influx of aliens of different cultural standards and of a different faith, manner of thought, and economic possibility. The migration problem is really an international problem, and the final result on the survival of one or another type of civilization a difficult thing to forecast. Nations which consider themselves superior, and shut the door to what they term undesirable immigrants, are acting no differently from the members of a social class, who equally consider themselves superior, and resist the entry of outsiders in numbers greater than they feel able to absorb without change. And a nation, or a class, may for that matter wish to resist being swamped by incomers even though it makes no claim to superiority. It may only claim to be valuable *sui generis*, and dislike being merged in a general sameness. Anyhow, all nations and all classes have used their schools to preserve their own characteristics. Some have done so consciously, like the German nation or the Roman Catholic Church; others unconsciously, not knowing that the atmosphere of the schools was definitely British, or Methodist, or what not. But all have done it more or less.

Since migration is inevitable in the world the question arises as to the way in which the schools should prepare for the possibility in the case of some of their pupils, and secondly, whether in some circumstances there should not be a definite training as preparation for a life in a colony.

The first point is, perhaps, covered by Dewey's insistence that schools should not train for specific stations in life, but for adaptability. It arises not merely in connection with migration from one country to another, but also with migration from the country to the town, or from one district to another. Not more than a quarter of the pupils of a rural school, as a rule, live afterwards a rural life. Clearly, therefore, a rural school which gave only a training fit for rural life would be doing an injustice to three-quarters of its pupils. On the other hand, the town school which gives, as it usually does, a training only fit for a town dweller is equally being incomplete. For some of its pupils will, and probably more would, go back to the land, if not in this country then in some colony, and deserve a training which will at least not unfit them for it, just as much as the rural boy deserves a training which will enable him, if he wishes it and economic circumstances make it desirable, to go to the town. The town school can do this best, probably, by means of summer camps, or parts of the summer term spent in permanent country camps, a procedure which is coming into some vogue for health grounds, but which also has the advantage here mentioned. In such a period the curriculum could be based on the district, crops and farming methods studied, transport and routes of various goods investigated, the local life studied historically and in music and dance, mapping and surveying carried on, and hosts of things done which would be useful in all sorts of ways, and throughout would serve the purpose of familiarizing with rural life from one aspect or another.

Our colonies like to get their immigrants young, pro-

vided the children are of good stock and have some training, and the question of direct and definite training for emigration of boys, or even girls, who have decided to go abroad is one which is attracting increasing attention. There are well-known voluntary agencies which not only assist children to emigrate, but educate them for it, with varying degrees of success. Co-operation with training institutions of whatever sort in the colony to which the emigrants go is desirable, and a policy of after-care. But there can be no doubt that all voluntary action is insufficient to deal with the migration question, whether of children or of adults, and that it will increasingly in the future be a matter not only of Imperial but of international action.

CHAPTER X

COMPETITION AND CO-OPERATION

"When men collectively are very poor, some few must be rich if there is to be any accumulation of wealth for civilized purposes. When men collectively are very ignorant, progress is only possible through the endowment of an educated few."

G. M. TREVELYAN, *History of England*, 1926, chap. iv

I SUPPOSE that few schoolmasters ever pause in their labours to ask themselves the question, whether they are training their pupils to compete with their fellows or to co-operate with them. It is one of the most fundamental questions that can be asked about school, or about life, and although seldom answered explicitly by school-teachers, it is answered by their behaviour differently in different ages, in different countries, and in different parts of the school work. Most British teachers would at once claim, and rightly, that the games of which they are so proud, and which they all encourage (not to say worship) train co-operation. Even here it might be retorted that in many games the co-operation is not unduly prominent, and that there is far more competition and subordination than co-operation, in the endeavours to get on to teams, or the hopelessness of never getting on to a team.

In studies, however, there is little or no talk of co-operation. Examinations, scholarships, and the like are frankly individual and competitive, even though the winner of a scholarship may be glad to have brought honour on the school. There is a certain amount of talk

in school now and then about gaining marks for the group or for the house or the patrol, but as a rule, and inevitably, it is individual progress which is recorded and rewarded.

Especially among the more intellectual pupils is rivalry almost necessarily encouraged. These boys are going to enter professions where competition is personal—at any rate, up to entry, and often afterwards. The Civil Service is frankly competitive in its selection methods; the university career is competitive throughout, with a certain amount of team-work in seminars and in the co-operation of disciples of some master; the Bar is even more so, etc., etc. Their parents are often themselves in such professions, often not very well off, and aware that they themselves owe their position to school and college success. Hence they openly or unconsciously encourage their children to head their form lists and in other ways become frank individualists.

With children of lesser gifts the situation is better. Their endeavours scholastically are mainly to avoid disgrace, to keep somewhere about the middle of the form. Their parents want them to get other things out of school—the ability to get on with their fellows, the friendship of those who will be their compeers in later business-life, the social hallmark of accent and behaviour. I do not know that these are better ambitions than the ambitions of the scholarly boy, but they strike me as less selfish ambitions on the whole. These boys, at any rate, are actually found more often together in gangs and sets, getting up concerts and arranging matches, etc.

. . . . .

This question is one where the similarity of school and

state, in the problems they have to face, is very striking; and where their mutual influence is very important. Theories of the state, and the actual practice of real states, can be seen throughout history to have oscillated between extreme individual liberty and extreme organization and subordination. There are to be distinguished, however, two forms of organization, and corresponding educational practice. In the one, an individual is trained for a definite station in life which is decided by his birth—as in a "caste" country the son of a potter becomes a potter, and the son of a priest a priest: or as in every country the wealth or poverty of his parents, their knowledge of occupations available, the peculiarities of the home district, determine in part the occupation of the child. In another form, however, while there would still be training for definite occupations, these would be decided entirely by the suitability of the child for those occupations. No actual realization of this theory has ever been achieved, though we are tending towards it now in more democratic countries, especially in the direction of assisting poor children with intelligence to get into occupations where intelligence is required. And although we do not perhaps do much in the direction of setting the children of rich men to menial occupations if their talents fit them for nothing else, yet even here we must remember that English Public Schools have strict "superannuation" rules, and ruthlessly send off those who in a lower form are overtaken by the age limit.

The former of these two forms of determination we may, I suppose, take as being disapproved by modern thought, which would give everybody his chance, the

only point in dispute being as to when he has had his chance, and at what age the state is entitled to assign him, or to permit circumstances to assign him, to a particular station. For it is usually considered to be the duty of the state to prevent circumstances making it impossible for a boy to rise in the world by taking advantage of educational opportunities.

On the other hand, there is in twentieth-century thought a considerable reaction against the Victorian idea of liberty, according to which the state merely kept the ring and saw that a certain amount of fair-play was enjoyed by everybody, but then left everything to cut-throat competition. There is evidently every gradation of "liberty" between the right of the individual strongest at one end of the scale and the complete subordination of the individual to some organization, nowadays usually the national state, at the other end. The tendency to-day is again for a form of determination, but one in which examination, testing, and trying out are deliberately and consciously performed, instead of being left to the hurly-burly of free competition, or avoided by the acceptance of castes.

In histories of education, Sparta is usually cited as the earliest, and the most pronounced, case of subordination of the individual to the state, and the Sophists as panderers to a demand in Athens for an individualistic education aiming at personal advancement, as did the training of the orator in Rome four centuries later, up to the end of the Republic. But more in touch with our own times are the problems of the Renaissance contrasted with the Middle Ages: for we are undoubtedly in a certain sense

living in a new Renaissance to-day, or, at any rate, in a time when bonds are being burst, though there is a new synthesis apparent between liberty and order, which was hinted at above. The Middle Ages, especially in the centuries before decadence had set in, were a time of closely knit organizations, to which loyalty was due on penalty of utter disgrace, which appears to have been really felt. There was, of course, serfdom and oppression, but there seems to have been also a genuine feeling that a man owed loyalty somewhere, and that either by birth or by his oath he had to be definitely attached to someone or some corporation.

All education under such circumstances was specific, book-learning for the Church, training in arms and courtesy for knighthood, apprenticeship to a guild or craft. It helped the pupil forward, but only along one line of advance, and there was no question of competition between tanner and woodcarver, or between them and the clerk or the knight. There was, of course, some transfer, some plasticity. The Church, in particular, was democratic in its search for recruits; and with the acquirement of letters went the possibility of even the papal throne. And a knight could be made from a craftsman, as was offered to Hal o' the Wynd. But the world was an organized world, with its adult members well labelled, and its education was really a number of educations for these different sorts of manhood. It was Platonic in that everybody knew his business and minded it, and was kept strictly to it by the organization and the ideals of the times. But it was very un-Platonic in the absence of his general education in music and gymnastic, though

perhaps in the scholastic training of its clerics, and the fact that they did a good deal of ruling, there was a slight approach to his philosopher-kings and their training. The whole fabric, however, was much more static than even his state (which is itself accused of being unprogressively perfect), and except in the Church there was little idea of selection of the suitable regardless of their parentage. It was a time, then, of closely knit social organizations, little transfer from class to class, well-defined duties and well-defined ranks, strong loyalties to rather narrow objects. A jig-saw puzzle fitting perfectly together, and making a perfect but immovable picture. Subordination, fitting into one's station, was the dominant note both of life and of training and education.

For three centuries or so after its hey-day the forms of this life went on, although a ferment was beginning to work which was to foam up and burst the old bottles. That bursting, the Renaissance, is usually dated from about the voyage of Columbus, whereby the Old World also burst its geographical bounds. Within the minds of men the release was from repression of individuality, and from that burden of care for the next world which had prevented the mediæval from being really interested in the progress of this. There was a great breaking down of barriers, much adventuring, a good deal of sinking and rising in the social scale and in wealth, and a release in studies from the narrow round of justifying Christianity as taught by the Church, and from ignorance or very second-hand knowledge of the great literature of the Greek Periclean age to a first-hand knowledge of it, and of the classical Roman literature. Liberty had revolted

against organization, and every man's life both in this world and the next was his own responsibility, and not to be settled by a Church or a Guild or an Order. Education very naturally responded by a corresponding change. It had been the acquirement of perfection within certain fixed provinces and in the employment of fixed rules and laws. It had not ventured on discovery, but studies had been a craft in which skill could be attained just as in, say, woodcarving, and indeed had been much less creative than woodcarving: though even pictorial art had been held down to portraying certain scenes, with the Holy Family in certain positions, and the like,

Studies turned to discovery, freedom, adventure, just as men were faring freely and adventurously over the geographical world. It is true that only too soon educators (who seem to love chains, much as they declaim against such things as examinations to-day) invented a new pinfold within which to impound Pegasus, and settled down to grinding up the classical languages, and presently to attending mainly to Latin, and within Latin almost exclusively to Cicero, so that the last state was worse than the first, for the mind of Cicero is not to be compared with the mind of Aristotle, even if the latter is only known through a Moorish glass darkly. But the general effect of the Renaissance at first was exactly as though a school were to be told that its curriculum was destroyed, that no examinations were to be held, that knowledge might be sought wherever it was found attractive, without any ban or hindrance; and that the authorities had just sent a large supply of the best books for all to read exactly as they wished, while a number of great travellers and scientists

had come from their journeys and works to tell the school all about their doings.

Before we turn to consider how like this is to the ideals of many educationists of our own day, I would ask the reader to cogitate on the amount of mental development which went on during the Middle Ages entirely outside the official educational systems of whatever sort, whether clerical or knightly or craft. It was during these centuries that the great modern European languages were growing up. Is it not lucky that they did so without the assistance of the official scholars? Would the latter have allowed them to develop? Would they not have resisted every change, and exerted all their influence on the side of pedantry? Could those languages have had the freshness, youth, exuberance of new powers which they did possess if they had developed in leading-strings? It seems to me very unlikely, and I turn my eyes on the present day and ask myself frequently, what movements are nowadays going on which are held in contempt by official educators, and is it not possible that real education, at any rate in some of its branches, is growing not merely without help from the schools, but actually under the ban of the schools?

To return, however, to a comparison between the Renaissance and to-day, there appear to be some points of resemblance and some of difference, the most promising features in our present era being the latter. Just as, in the century preceding the actual Renaissance, Prince Henry the Navigator and his fellow-workers had practically invented the sailing-ship (so many improvements in sailing and in navigation had they made) and thus led to the expansion of the known world by the

voyages of the great discoverers, so in the nineteenth century the locomotive revolutionized transport and communication. Just as the printing-press made the communication of thought to large numbers possible, so telegraph, telephone, wireless communication, and broadcasting have made and are making to-day a change certainly on a similar scale and possibly as fundamentally influential. The world has again burst its bounds and splashed into a new life; it is conscious of new powers and unaware as yet of their limits. There is a feeling of endless possibilities in the air. The school has had to change fast to keep up, and, of course, it has not changed fast enough. It was hardly to be expected that it should. But, just as at the Renaissance, there have been plenty of voices crying out that it should cease studying dead things, and turn to teaching something about this pulsating life which is going on outside its doors.

On the other hand, the situation as regards the relation of individual to the state or other organization is different from what it was at the Renaissance. Then the organizations which had been controlling men for centuries were being defied, and personal liberty was being sought. Except, perhaps, in Russia and Germany, that is not the situation to-day, and even in those countries it is not entirely the same. In Great Britain the reaction is rather against extreme individualism, and in favour of quite a considerable amount of state direction and control, though the opinions of many people and parties on this matter are clearly very vague and often inconsistent.

Most interesting in respect of the movements we are at present considering is Germany. There, between 1870

and 1918, was a state where loyalty in a definite station, and training for a definite station, were seen exemplified in efficient action. That Germany was, like the Middle Ages, closely organized. People were very definitely officers, *Unteroffizieren*, or privates in the army, and held similar rank in private life. Indeed, there was much less "private" life than a Britisher is accustomed to. One belonged in a majority of cases to some service, civil or official, or as much so as possible. One belonged to clubs and guilds which wore uniform and to quite a considerable extent regulated the lives of their members. Above all the minor organizations towered *Deutschland*, even over the separate countries of which it was composed: *Deutschland über alles*.

There were two very efficiently organized ladders of education in that Germany, the one beginning with the *Volksschule*, and leading for those who desired it to *Mittelschulen*, *Volksschullehrerseminaren*, and the like. Only few of the pupils stayed long enough at school to pass the examination which franked them into the "one-year volunteer" class, who instead of two years of army service did only one (largely at their own cost) and supplied reserve *Unteroffizieren* and officers. The other ladder was formed by the *Gymnasium* and the *Oberrealschule*, which led up to the Certificate of Maturity (the entrance to the professions and the university) and to officer rank in the army. There were no bridges between the two ladders, and they perpetuated a division of the nation into two classes. But they were very efficient ladders, and within his own station everyone in that pre-war Germany was very definitely entitled to rights apper-

taining to that station, as well as obliged to perform duties which belonged to it. It was easy to know who was your superior in the hierarchy, either of military or of civil life, and who was your inferior.

Moreover, in that Germany there were many arrangements for preventing excessive poverty, and illness, and the like—for example, compulsory insurance against sickness, medical inspection of school children, and school clinics and dental clinics. Many of these things could be said to be due to a desire to make fit and healthy recruits, and that may well be so, but the fact remains that there they were a generation before they came to England. That Germany, in short, was stratified into classes, gave education to fit for definite stations, supplied, however, many organized services of health and insurance, and was closely organized, a kind of monarchical and military socialism.

Yet in this Germany there were, nevertheless, growing, quite unknown even to those who were most concerned, the seeds of movements which were to result in the Revolution of 1918, of which it is the educational side which interests us. The early pioneers of what was later to become the "Youth Movement" were those who founded *Wandervogel*, a society for the promotion of the practice of tramping through Germany's beautiful country-side and learning it at first-hand. For many of the members of that society in the first decade of this century there was nothing more in it than that: at least I can speak for one, for I was myself a member, published with Kurt Haehnel some account of the movement in an English journal, and received the magazine of the society until the

outbreak of war. But for many it was, as later appeared, something more; it was a revolt of individualism against the organization and materialism of the *Reich*, which I have endeavoured to describe above.

"For that school of thought", says one of the *Wandervögel* in a letter in 1924, "did not care for a human being as such, but cared only to make of him a utilizable and an obedient member of this new civilization. He felt that he was being *mis*used, misused for something for whose meaning he had no insight, and that his teachers were contemptuously passing over that vital and living longing which he felt in himself for a wider humanity, for spiritual things, for life, a life of whose infinite possibilities and sanctity he had a dim foreboding. He hated his teachers, who did not respect this longing, but treated it as wild imaginings, youth's greensickness. And this hatred grew to a passionate deep-seated revolt against the whole elder generation, by which youth felt itself misunderstood in its best wishes, and whose ideals were to youth not ideals but idols, idols on whose altars youth was asked to sacrifice itself."

"So arose a strife between father and son, which, in the early days of the Youth Movement, led to many a tragic chapter in its history. In general, however, the external effects of the movement were harmless enough, and its disciples became only passive resisters in the schools, leaving the whole hated atmosphere of the city, and (often enough) of the home behind them whenever possible, to flee out to the free realm of Nature. Nature became to them their mother, on whose bosom they found all that their longing sought for: freedom, beauty, primitive

healthy life, where nothing was contaminated and spoiled by the vanity of man, where they were filled with happiness by the pulse of the living Creator. There were nourished the souls of those who had hungered in the schools. Nothing else so formed and tested, their whole being as this life with Nature. They made spiritual alliance with the earth of their homeland and its history, gained an imperishable feeling for everything pure and true, a living and vital way of looking on things and people. Wandering together the livelong day, they experienced true companionship, true society: even in external matters they were dependent one on another, and within their hearts their common experiences welded them together indissolubly."

"Historically it may be true that the spiritual roots of the movement reach back to Nietzsche, and even to Rousseau, with his cry of 'Back to Nature'. But the actual movement was independent of these sources, a reaction against the civilization in which youth found itself. I need not portray in detail the many special arts and activities which accompanied this *Wandervogel* movement, the discovery of old folk-songs, country-dances, the use of simplified clothing, etc."

But presently the beginners of this movement were themselves no longer youths, and the inertia of conservatism seemed likely to make it as though it had never been, when the war came. The comradeship of service in the field aroused many of the old feelings, and (not to speak of the actual Revolution) there was again found after the war a strong movement of revolt against the suppression of individuality, which now definitely became

known as the *Jugendbewegung*, the Youth Movement. It was comparatively unorganized, some of its branches being moulded on the old *Wandervogel* model, some apparently on the British Scouts, some being denominational. Apparently its members could and did hold all kinds of political and other beliefs, but their unity of belief in individuality and youth was, in spite of their outer lack of organization and even their inconsistencies, a bond which they all recognized.

In the schools the influence of similar ideas was great, and here and there an amount of liberty was granted to teachers such as has, perhaps, never before been their privilege. The Hamburg experiment is best known. There was at first to be no set curriculum, no time-table, breaks were to come just when the children were fatigued and wanted a break; they were to form themselves into groups and pick their own teachers. There was, in short, to be complete freedom. It must not, of course, be imagined that this was characteristic of all schools in Germany, or even of all schools in Hamburg. There must be borne in mind the existence of a body of school-teachers who had received the strict and efficient training of the old regime, and were not likely to change in a moment. Indeed, a story which I heard in Professor Stern's seminar in Hamburg illustrates the point of view of some of the Old Guard. In an inquiry into the ability and powers of certain children, use was made of a questionnaire to teachers, in which *inter alia* it was asked whether the child showed curiosity about what was taught him, asked questions about it, and perhaps even questioned parts of it. "*So was kommt bei mir nie vor*", indignantly replied one of the

class-teachers. "Such a thing never occurs in my class-room." Doubtless he was right. That, indeed, was the complaint of the *Jugendbewegung*, and those in the schools who held similar opinions. "*So was kam nie vor*", and they wanted it to.

Such excessive freedom led at first, of course, to anarchy. One of the first teachers in those Hamburg experimental schools has written a book, *Die Wiederentdeckung der Grenze*, in which he describes how they gradually came to rediscover the border-line between freedom and order, or rather the border between too much order and too much freedom. The constant noise on the staircase, when there was no time-table at all, became unbearable. There was disappointment and unfairness in the use of the gymnasium, the piano, etc., and time-tables had to be made for these. And so presently there was again a time-table and a skeleton curriculum. But the difference was that these were made by the school, for its own use, and were not inflicted on the school by authority from without. Self-government was, in fact, discovered.

Many of the ideas of those Hamburg schools, and also of other progressive schools in Germany, e.g. the *Landerziehungsheime*, remind me strongly of Dewey and the Project Method. There in Germany also one hears disagreement with the splitting up of the subject-matter of study into separate "subjects". There also there is a desire for co-operative jobs carried out by groups actuated by the desire to solve some problem. Allowing for the differences inevitable between the American and the German expression, it is clearly on the whole the same

idea which is blossoming in both countries. But as far as self-government goes, America had the great advantage of having experience of the practice in its own civil life. There is, it is true, opportunity here for the cynic to make cutting remarks about American municipal politics. But, nevertheless, the fact that in the early American townships the "town meeting" was the recognized method of government, and that this is almost within the memory of old people now living, and in any case felt to be quite a recent practice, results in a natural recourse to the "class meeting" or the "school meeting" to settle points of discipline and organization.

Self-government has come in Great Britain, it seems to me, to mean always the government of the class or the school by the scholars as far as disciplinary offences are concerned, but only to a slight extent to mean running the school complete with curriculum, time-table, and all. That is, however, what it means in some American schools and in these German schools. The American teacher, if he is teaching in such a school, has to do what he can to cover any special ground which he wants the syllabus to cover, by suggestion and guile, and by inviting the class now and then to test themselves by one or other of the "standardized tests", to discover whether they are up to the usual mark in arithmetic, reading, or what not. However, our purpose here is not to compare various countries as regards their ideas of self-government in the schools, but to follow the wave of freedom which is passing over education in various ways, and its bearing on the question of competition versus co-operation.

It would seem that the school, except in pioneer

examples, has not outgrown the Victorian idea—that competition will result in the best of all possible compromises—as quickly as has the outer world. Education to enter the whirlpool of free competition cannot be the same thing as education to enter a world of much, or, at any rate more, state guidance, and filling a station (though that station is no longer, in theory, decided by accidental circumstances). For example, if vocational guidance is to become a usual thing, and it is well-organized and handles four-fifths of the children in that same Hamburg where the free schools are to be found, then the idea of falling into one's place must be inculcated by the life of the school, which must cease to look upon success as a kind of linear thing, with only a top and a bottom, and must rather think of success as meaning fitting into place in a team, even if that place be not one requiring very rare talents.

It seems clear that modern society will continue to be based upon the division of labour, which truly seems to be, as Adam Smith taught, the cause of prosperity, by enabling mankind to produce, co-operatively, far more per individual than each individual can produce if he has to do everything for himself; far more for the weakest than the strongest could alone produce. That is to say, co-operation is an absolute necessity of modern existence. For him, however, the only co-operation that was necessary arose out of competition, out of the higgling and bargaining of the market, and the nineteenth century which followed Adam Smith thought and taught the same, with few exceptions, such as the well-organized Germany we have described. School in such a theory had no need to teach or encourage co-operation, which was entirely cared

for by the instinct of barter. Encouragement to compete, indeed, was what was wanted, and the moral teaching of the period was mainly of the "self-help" order. Humanitarianism certainly lived and grew, but it was, nevertheless, a humanitarianism which wanted those who had been driven to the wall to be helped, given a breathing space, armed, and thrown again into the mêlée. All these things, remember, were what the reformers, not the reactionaries, wanted, and what on the whole they got. The reactionaries wanted an ordered world, but one in which individuals stayed in the station into which they had been born. The job which schools had to perform in that society was, according to the reformers and the progressive party, to give everybody the educational weapons to enable him to enter the conflict. The reactionaries wanted schools to train children in those customs, skills, beliefs, and in that portion of human knowledge which would enable them to be efficient in their hereditary rank, but not to rise out of it. For many they did not consider schools necessary at all.

The reformers have won, and, though some are not yet content, and doubtless there are many places where the machinery creaks, we have now a state educational system which gives every boy and girl, if not an absolutely equal chance, at any rate a fair approximation to that ideal. It is, as a rule, not the educational system but other circumstances which prevent a child from taking advantage of that chance. It is a little difficult to know what those reformers of last century thought would result when this ideal had been attained, especially as most of them appear to have believed, somewhat inconsistently, that differences

of talent among mankind were mainly due to differences of educational opportunity in childhood. If that were so, and every child were to be given an equal education, it seems clear that competition would rise to a frightful pitch, and that it would still be merely accidental circumstances which decided which men obtained the more lucrative and attractive positions in the necessarily co-operative but extraordinarily competitive society which would result: unless, indeed, they believed, as I think they must, that there remained individual differences of character which led some to be more successful than others, even though endowed with the same intellectual talents and enjoying the same educational advantages.

But our reformers of to-day differ from the reformers of last century. They still very definitely want an equal chance for every child of a good education. But they certainly do not want unlimited competition in after-life, and they do not believe that the best of all co-operation comes from competition and the instinct of barter. The left wing of political and economic thought it is nowadays which wants society to be organized, the right wing which is well content with competition and the free fight. The difficulty now is to see how the left wing reconciles its desire for equality of opportunity with organization and the comparative absence of competition. The phrase equality of opportunity implies competition, otherwise one would have to say equality of reward—indeed, *tout court* "equality". And equality in every sense, if it really means equality in every sense, is incompatible with the division of labour on which we are assured the

possibility of our existence in such numbers in the world depends.

However, one takes refuge in deciding the problems piecemeal. Justice certainly demands that the school shall be open to every child if he can take advantage of it. Progress in civilization demands co-operation, marching forward each in his place. But it demands also selection, so that the place fits the man and the man fits the place; and it demands also the privilege, for some, to leave the ranks and carry out those individual works of genius which, in the eyes of some, have been the real steps in the ladder of progress.

In one of his books E. B. Titchener spoke of the progress of science being represented for him, in thought, by the mental image of a wide seashore, with the tide slowly but irresistibly coming in, held up for a long time here or there by rocks or sand-bars, in other places stretching long fingers of the sea into the foreshore, where some successful researchers have made a track into the unknown which is not yet linked up with the general advance. One might use the same image, not for progress in science only, but for progress in civilization. You remember, too, Clough's lines:—

> For while the tired waves, vainly breaking,
> Seem here no painful inch to gain,
> Far back, through creeks and inlets making,
> Comes silent, flooding in, the main.

Which are more important for progress, the pioneers or the great co-operative body which follows? Or are both required? Bateson, in his Melbourne address in 1914 to the British Association, said: "The great advances of

science are made, like evolution, not by imperceptible mass-improvement, but by the sporadic birth of penetrative genius. The journeymen follow after him, widening and clearing up, as we are doing along the track that Mendel found." Bateson spoke as a geneticist, and with breeding and selection, mutation and variation in mind. The complement of the picture is found in those who emphasize the communal life as the needful medium in which the genius, though he may be born, must develop. Krieck, in his *Philosophie der Erziehung*, says (I translate roughly): "The old controversy, whether history is made by creative individuals, or is the result of the immanent and regular development of the organism 'society', distinguished personalities being only the exponents of this development, is at bottom futile. There is no social growth without the accompanying and pioneering growth of personalities, and no personal growth without social growth. . . . In the general wants and wishes of a period the Idea as the necessary and the coming idea is felt beforehand and darkly seen; but as positive and concrete form it is the creation of creative individuals."

CHAPTER XI

EDUCATION IN EARLY ADOLESCENCE

"When we can do more than we want, we have strength enough and to spare, we are really strong. This is the third stage of childhood, the stage with which I am about to deal. I still speak of childhood for want of a better word; for our scholar is approaching adolescence, though he has not yet reached the age of puberty."

ROUSSEAU, *Emile*

"There is a well-defined period or stage of development preceding adolescence that is called the pre-adolescent or pre-puberty stage of development. The period lasts three or four years and extends, roughly speaking, from ten to fourteen in boys and from nine to thirteen in girls."

WINFIELD S. HALL

THE parts of the educational field where growth is going on most vigorously to-day, and where careful consideration is most necessary and most likely to repay itself because it is not too late to guide the course of events, include that part which deals with the education of youths and maidens between the age of 11 and 18, of which the years from 11 to 15 may be called the years of early adolescence.

This problem is pressing to-day because it has only become possible in the last decade to raise the school age to 14, and it is only in the present century that the *effective* upper age limit of schooling has risen above 11 or 12. Although there were young adolescents to educate in the nineteenth century, and adolescents being educated, the latter were not in such numbers as to form a serious and important problem. Education over the age of 11 plus was in England cared for, until recently, either by

secondary schools (for the clever) or by the ordinary elementary schools (for the majority). These latter had, however, by the Cockerton Judgment of the late nineteenth century, been forbidden to tamper with anything approaching secondary education.

With the raising of the school age to an effective 14 plus, however, there came to be such numbers of children in the upper classes of our ordinary elementary schools that it was no longer possible to avoid seeing that a mere continuation of elementary education was not a suitable curriculum. The problem was faced by the Board of Education's Consultative Committee, in their *Report on the Education of the Adolescent*, printed in 1926; and later the President of the Board issued a pamphlet, *The New Prospect in Education*, which was largely based on the *Report*.

The problem of the education of the adolescent is different from that of the younger child because there is a physiological change which usually begins somewhere between the ages of 10 and 13, and continues to its completion somewhere between the ages of 15 to 18. That change is the maturing of sex in the boy or girl; and it brings with it important educational consequences.

There is first of all, and obviously, the actual fact of the beginnings of sexual interests, which now first start to be half conscious even although they may, according to Freud, have been present in an unconscious form from infancy. It is no longer so easy to settle whether girls and boys shall be educated together. We in Scotland usually continue to educate them together. But even a convinced co-educationalist will admit that a new factor

comes into the problem with the dawn of adolescence; though he probably would claim that co-education was now even more important than ever before.

But there are more far-reaching consequences. For the change in the blood-composition leads to a completely different emotional make-up of the child. It is during this stage that the child begins to feel the call of responsibility, the claims of poetry and art, the pangs of self-questioning, in a way which he does not understand, but which makes him realize himself as no longer a child. With young manhood and young womanhood there will come, after about 17, a crisis to this emotional development, and what form the crisis will take depends very largely on the kind of education that has been enjoyed during the period we are here discussing.

In particular, the child is beginning to feel the approach of the period when he or she will go out of school into a vocation. And there is a grave danger, if the same kind of education is continued into the adolescent school as has proved proper in the primary school, that the child may come to look upon the work of the school as merely something which is keeping him back from his proper work, and wait impatiently for the day when he may shake the dust of the schoolroom from off his feet.

For all these reasons, the recommendation of the Hadow Report referred to above, that there should be a definite break in school-life at about the age of 11 plus, is being widely accepted to-day in one form or another. The nature of the change is different in different countries, but the tendency to make some change at about this age is apparent in all.

There are, it is true, those who say (as, for example, Mr. Hugh Richardson) that the so-called crisis in the life of the child is rather a crisis in the mind of the school administrator, who finds at this age that individual differences can no longer be ignored; which, however, would still be a good argument for some new organization or reorganization at that age: or that the age of 11 is simply arrived at by subtracting three years from the school-leaving age of 14, because it is desirable that if the children go to any other school at all, it should be one with a reasonably long course, such as three years, an argument which would take all the particular virtue away from 11 if the school-leaving age were raised. Most, however, would agree that at some age or other, whether it be 11, as in England, or 12, as in Scotland, or even perhaps a little later, there is a crossing of the Rubicon between childhood and early youth, the dawn of young manhood or womanhood.

We may first ask ourselves what kind of change in the school would be in accordance with modern psychological, ethical, and political views at this critical age, whatever it may exactly be. Everyone agrees, I think, that the *atmosphere* of the school should change from a nursery atmosphere to a much more grown-up atmosphere. This can be effected by the increased amount of responsibility —individual responsibility and responsibility as a whole —given to the children; by certain measures of self-government; and by a certain adultness of outlook in the curriculum.

Many will agree, I think, that the child becomes again at this period more creative. The infant is creative and

original. The boy or girl tends, I think, to be less so. At about 12 there is a return of this spontaneity.

Everyone agrees that a certain rebelliousness against authority begins somewhere in the period we are considering. And in this period too there comes the urge to form gangs and companies, and to combine in all kinds of ways. A kind of Boy Scout organization—whether actually under that name or not—may be expected to "go" well in our adolescent schools.

But while everyone agrees that the curriculum should begin to be more grown up, not everyone agrees whether it should begin to be "vocational" or not. Perhaps instead of the word "vocational" I should employ "prevocational". For vocational might seem to mean actual training in the technique of some definite trade, and that, I think, is proposed by no one before the age of 14, except for defectives. Prevocational means directed in a general way to the acquirement of the basic skills of hand and eye which lie at the root of so many vocations; and it may also mean learning *about* occupations with the intention of assisting a choice at a later stage.

Almost everyone to whom the direct question is put will reply that 12 is far too young to begin specialization. But they do not all mean the same by this answer. There are ethical and political questions involved here which are very delicate—which form very thin ice. The workers of the country, in the mass, object to anything like prevocational training for children of 11 to 14 because they fear that this may mean denying to their children that cultural education which is the open sesame to the better-paid walks of life. Others reply by pointing out that a

so-called cultural education leads in many cases to nothing but a distaste for manual work, and does not open the way to a compensating intellectual life; in short, that a so-called cultural education may only swell the ranks of the lowest-paid clerks. There come into the argument also the experimental psychologists with their measurements showing the grave extent of individual differences in intelligence and in other qualities, and the vocational advisers who advance the Platonic argument that the happiest world would be one in which every man would be doing the work for which he was by nature best fitted. I shall return to this question later, more by way of describing certain vocational experiments than in the hope of solving the fundamental problem whether vocational teaching should be encouraged.

I turn back in the meantime to the question of the age at which this change from the primary to the secondary school is to take place—and here and henceforward I propose to use the word "secondary" in this way, recommended by the Hadow Report, as meaning *all* education, of *whatever* nature, over a certain age (which we are just about to discuss). In England that age has settled down to 11 plus—that is, the end of the school year during which the child passes its eleventh birthday. In Scotland there is no such agreement, and instead of speaking of any *age*, we speak of reaching a certain *standard*, a standard of school achievement, called the qualifying standard. This contrast brings us at once to the question whether by 11 plus we mean the chronological or the mental age.

Up to the present what has in practice been meant

has been the mental age (or, at any rate, an achievement age), not the chronological age. This is obviously so in Scotland, where, however, we must note the additional provision that: "Education Authorities in all cases may, and in the case of children over the age of 13 should, make special provision for the instruction of children who in the course of normal promotion have failed by more than a year to reach the division appropriate to their age" (Paragraph 15 of the Scottish Day School Code).

These are the children often unfortunately termed "non-passers", i.e. children who have reached the age of 13 without passing, and without any prospect of passing, the "qualifying examination". With this important exception, however, the Scottish method is to make the change from the primary to the secondary school depend upon reaching a certain achievement age, which doubtless requires a certain mental age. The *average* chronological age in Scotland is nearly $12\frac{1}{2}$.

In England there is more talk of an age and less talk of a standard to be reached. But in fact there has been a standard, which has arisen out of the competitive nature of entry into the secondary schools in England. The provision of such schools in England is not so generous as in Scotland, nor are there quite so many free secondary schools, or very cheap secondary schools. The law in England requires a secondary school which receives state aid to have a certain number of free places for children chosen from the elementary schools of the region, the statutory proportion of such free places being at present 25 per cent.—though in passing it should be noted that

many authorities make a more generous provision, and some have made their secondary schools entirely free. These free places being there to be filled, it has naturally followed that the entrance examination to the secondary schools has become a competitive examination by means of which the children are chosen who are to enjoy the free places. The other children of the secondary school, the fee-payers, who usually pay a fee of about £9 per annum (which covers about one-third of the actual cost of running the school), are merely required to qualify in the examination; but in practice the competition of the free-placers, and a democratic feeling that a similar standard ought to be exacted from the fee-payers as from the free-placers, has led in this case also to the entrance being largely dependent upon the attainment of a certain rather high standard of school achievement.

In England too, then, the passage to secondary education, the boundary between primary and secondary education, has been a level of achievement, not a chronological age—has been an educational or almost a mental age.

But the physiological changes which bring about the dawn of adolescence (so runs the argument), and cause the change in outlook which characterizes the period under our purview, do not depend very closely, if at all, upon mental age or school achievement. A dull lout of 13 may be just as much in the adolescent period as a precocious boy of that age. And the reason for the break from one kind of schooling to another, advocated by the Hadow Report, is not that the child has reached a certain facility in arithmetic, or knowledge of history, but that

he, or she, has come to a physiological and emotional stage when a change of outlook and atmosphere is required. If these considerations are correct, then it is the chronological age which forms the boundary between primary and secondary education, not the mental or the educational age. More exactly it is the physiological age —but this is, I think, admittedly more close to the actual age than to the mental age, though experiment would be valuable here.

All this seems to point to the notion that the change from primary to secondary education ought, with few exceptions, to take place at a certain age, say 11 plus, *no matter what level of attainment the child has reached.* This is the policy now becoming known in England, and in some authorities being adopted, under the name of the "clean cut"; and since these words were first written it has been set out in the Board of Education pamphlet *The New Prospect in Education.* This policy advocates taking all children out of the primary schools at this age and placing them in secondary schools, regardless of what form or class or standard they may be in the primary school, and without any examination for the purpose of determining whether they shall be so transferred or not. Remember that in this sentence the phrase secondary school, as always henceforward in this chapter, means merely a school for children over 12, and does not connote a school in which education leading to a Leaving Certificate and to University matriculation is given. This is the nomenclature of the Hadow Report.

Even with this understanding, however, the policy of the clean cut is sufficiently novel and revolutionary to

cause great surprise and incredulity in the minds of most hearers. There are several corollaries to it, which need to be understood before it has any chance of a proper hearing. Recall that it is adopted because of the need for a new outlook and atmosphere in schools for children over 12. It has nothing to do with their intellectual development. It follows that there will be children in the primary schools whose mental age is as much as 14 or 15, and children in the secondary schools whose mental age is as low as 8 or 9. It follows also that in the primary schools, if intellectual injustice is not to be done to the clever children, there must be no upper limit to the kind of work done, in a purely intellectual sense. And similarly there can be no lower intellectual limit to the work done in the new secondary schools. In short, although the actual passage from primary to secondary schools is by this policy to depend on age only, yet the classification of the pupils in the secondary school will clearly depend on mental and educational age, i.e. on an examination in achievement. The new school will be compelled to have several courses of different intellectual levels.

It must not be imagined that there will be work going on in the primary school, among the clever children, which is identical with work going on at the same time in the secondary school among normal or dull children. Intellectually that may be so. That is, the abstract demands on the brain of some of the primary work may be higher, and will be higher, than the abstract demands on the brain made by some of the work in the secondary school. But it is an essential postulate of the whole arrangement that there shall be a complete change of

attitude in the secondary school. It has to look more definitely to the outside world. It has to give more responsibility. It will choose different aspects and portions of the subject-matter. The work will be very different. But *intellectually* there will, it is true, be a great overlap. This is inevitable if the transfer has to be made at a given age. And this is necessitated, so runs the argument, by the fact that nature makes the change in a child at a given age more or less, and not in accordance with the amount of history or English Grammar known.

It would seem at first sight as if the "clean cut" were a return to the days of the "lockstep", when children were promoted from class to class solely because they had spent a twelvemonth in the preceding class. For in the clean cut there is also a promotion solely because of age. But I think I have made it clear that there is really no such return intended, although it may be admitted that there will be some danger of the ordinary teacher and ordinary administrator returning to bygone ideals. If, however, what I have just said about there being no upper intellectual limit to the work in the primary and no lower limit to the work in the secondary school is taken in earnest, then there will not in reality be a lockstep.

It is clear that this kind of primary school could only exist if either the school were very large, so that even of the advanced children a sufficiently large class could be formed, or if individual work of some kind were permitted at least for the cleverer children. So that from this new point of view we again come upon an argument

for the introduction of individual work—as the only means by which clever children can be kept in the social atmosphere of the primary school and yet be permitted to continue with abstract study which will be worthy of their powers.

In the same way, in the secondary schools, there will be the need of large schools if there is to be such a classification in the school as will care for children of such a wide mental age range; or alternatively here too individual work could be used to overcome the difficulty; or finally, the children from the primary schools could be sorted out into different *kinds* of secondary schools, suitable for various degrees of intelligence or for various kinds of taste and ability.

On the whole, England has gone in for having different kinds of secondary schools. The Hadow Adolescent Report recommends two, which it calls Grammar Schools and Modern Schools. The grammar school is the school for children who are to take a Matriculation course or similar course, the modern school is the school for children who are to enjoy an education which is to be practical, and possibly artistic and musical, rather than academic. In the Scottish terminology, the Hadow Report modern school is the Advanced Division without, however, any necessary suggestion that it should have a shorter course than the grammar school, though that in practice will be the case. The grammar school corresponds to the regular Scottish secondary school or academy or high school.

In London, as in some other parts of the country, there is a three-fold classification after 11 plus, into

(1) Secondary Schools in the old sense, i.e. our new Grammar Schools; (2) Selective Central Schools, which take children of lower I.Q.'s as a rule, but still above the average, and have courses of an industrial or commercial nature; and (3) Higher Tops, where the remaining children, of still lower intelligence, stay on in their original elementary schools, or possibly are concentrated into one such, in the same manner as the "non-passers" of Edinburgh are concentrated.

My own very strong predilection is for an avoidance of this division into different schools and for keeping all the children in the one institution, which would then necessarily have to be large if different courses are to be provided within the school corresponding to what would otherwise be separate schools. The advantage of such a plan is that it leads to social solidarity, which we very much require to keep in mind. Its disadvantages are those usually associated with a large school and the possible danger of not keeping the various courses sufficiently distinct, and thus leading to a dilution of the standard of scholarship in the academic course. My own belief is that the social advantage far outweighs the intellectual danger. Nor do I think that the intellectual danger would be as great as is sometimes imagined by those who point to American schools, which in the first place are by no means identical in organization with those I have in mind, and in the second place have other reasons for being less scholarly than the corresponding English schools.

However, let us leave this question of organization and return to the kind of curriculum which ought to be found

in a secondary school, or group of secondary schools, of the new kind. There will clearly continue to be the kind of academic curriculum which leads up to the Leaving Certificate, the universities, and the professions. A second track through the new secondary schools will be one like the Scottish Advanced Divisions. Let us see what is laid down by the Scottish Education Department for the latter. "An Advanced Division course must provide for training in morals and citizenship, for Music, and for Physical Exercises, as well as for intellectual training. The main instrument for the latter will be the English subjects, together with Mathematics and Science and, as a rule, Drawing. *After* such general provision has been made, the local conditions and the needs and aptitudes of individual scholars may be catered for, by courses in practical subjects such as Benchwork, Dairying, or Cookery, by Commercial Subjects, or by a foreign language. Normally, the longer the course and the more definitely vocational the subject, the later will be the period to which specialization in this subject will be deferred."

It will be seen that these instructions in Scotland are very broad and that within the limits of the Code an Advanced Division course may range from one which is definitely vocational to one which is not distinguishable from the course in secondary schools which we have decided to call grammar schools. The advice as to practical subjects and specialization is worthy of more careful reading. The more definitely vocational a course, tbe longer is its commencement to be deferred. But the age up to which a child may be expected to stay at school

has also to be borne in mind, and in the case of a child likely to leave as soon as the law allows, specialization in a vocational subject may be begun earlier.

This advice contemplates that children leave school at different ages, as no doubt will always continue to be the case. Still, we must remember that the school age has within our own time been raised to 14 plus, that it is likely to be raised at no very distant period to 15 plus, that in some American States and some British Colonies it is already 16 plus, and that any such raising of the school age will necessarily reduce the scatter among the leaving ages of the children. Before considering what influence these facts should have on our educational policy, consider a little more closely how the present existence of different leaving ages, ranging from 14 to 18, ought to influence the courses pursued at school.

The advice of the Scottish Education Department, contained in the appendix to the Day School Code which I summarized above, is to give a cultural education to those children who are going to stay long at school, and a more specialized and perhaps even vocational education to those who are going to leave earlier. It is not quite clear whether this advice is given on practical grounds of expediency or on more fundamental grounds of educational principle. The practical reasons for pursuing such a course would be that a child who is going to leave school early will probably be compelled to go into some humble occupation by economic necessity, and that the state has the duty of giving him such an education as will be a preparation therefor; whereas it is clear that the beginnings of a cultural higher education, being only

the beginnings, would be of little or no use to him, would be felt by him to be leading nowhere, and would have therefore no educative effect whatever, however good the same subjects might be for a boy who felt that he was going to continue them for a long period of his life.

Every raising of the school age, however, takes away the ground from below such a form of the argument. For if the school age were to be raised to 15, as will almost certainly occur within our lifetime, and perhaps eventually to 16, then the same argument would defer specialization and vocational training of any sort by a further two years.

The advice as to the age at which specialization may be desirable, and the dependence of this on the prospective leaving age of the child, may, however, be based, at least in part, on a more fundamental educational principle, which would be unaffected by any raising of the school age. The age at which a child intends to leave school is, it is true, unfortunately even to-day influenced by the economic position of the parents. But it is also a rough measure of the interest of the child in, and his ability to profit by, school instruction of the kind at present possible. And even if the school age were raised for all to 15 or 16, there would remain the indubitable fact that what is called a "cultural general education" has no attraction for some children, for a good number of children; no intrinsic attraction, that is. On these grounds of greater or less suitability for this or that course, there might well be vocational courses for certain children, even if the school leaving age were to be the same for all. It must be remembered that one of the

necessities of the adolescent school is a feeling of having significant touch with real life. For some children this may be possible of attainment in no other way than by giving the work a definitely vocational aspect.

There is one thing which can, I think, be said with absolute certainty about vocational education. For very dull children, below an intelligence quotient of 70 or even 75, it is the one hope for them, the one way in which they can be aided to take a self-respecting place in the adult community. They, at least, should have, after about eleven, a definitely vocational training; not, this time, a pre-vocational training, but without equivocation a training in a trade. It is, indeed, positively criminal to attempt anything else with them; and on the whole we do help them in this way and with great success. I am told that the percentage of employability, and of employment, in the children leaving the schools of this sort for "special" children in London is far higher than the corresponding percentages in ordinary schools, which makes one wonder whether for many of the ordinary but not academically minded children similar treatment might not be most suitable, provided that it is first made certain that they have their chance of access to the more "cultural" education.

There have also been some educationalists who have claimed that a vocational education may even be, at any rate for some children, as cultural as any. Probably Kerschensteiner, of Munich, is the best known and the most influential of these. It is more than a quarter of a century since he instituted frankly vocational schools —mainly continuation schools—in the city of Munich,

of which he was Director of Education, insisted on employing teachers who were journeymen in the crafts taught, and formed committees of the master-workmen to run the schools, on lines which have been almost identically followed by Mr. M'Nally in the guidance of the very successful continuation school movement in Edinburgh. We are here, however, concerned with Kerschensteiner's claim that such specialized schools can, when properly used be just as cultural in their influence as the more academic schools. He bases this claim mainly on the freedom from scrappiness which results, the freedom from superficial dilettanteism, which is admittedly the enemy of true culture. He claims that the ramifications of every subject, even of a trade, are so wide that it can become the source and origin of real culture if pushed far enough, as it can be if there is specialization and real work. You will see here some connection with the ideas underlying the project method, for here the trade which the boy wants to enter is being used as the project, supplying the motive, the significance, and the reality; and the wideness of general culture is to start from that centre. It is, you may recall, a fundamental thesis of John Dewey's, that there cannot really be any dualism in true education between the vocational and the cultural, the physical and the mental, pure and applied thought, and that is what in effect Kerschensteiner also says.

To sum up. The problem of the education of the adolescent has become pressing because of the raising of the school age to 14 plus. The problem arises because at about 11 plus there begin the premonitions of that

physiological change due to the maturing of sex, which causes new emotions and needs in the child, and makes the nursery-like atmosphere of the primary school no longer suitable. Since this happens at about 11 plus with all children of whatever I.Q., more or less, there ought to be a clean cut at that age between primary and secondary education—secondary education meaning now simply all education over the chronological age of 11 plus. The primary school ought, because of the varying M.A.s of its pupils, to have no upper intellectual limit, nor the secondary school any lower intellectual limit. There will, however, be a great difference of atmosphere and outlook in the two types of school. The secondary school should have an atmosphere of greater responsibility, and more an air of looking to the outer world and the life-work. For this reason it may properly begin to be, in a certain sense, pre-vocational. For there are many children who find no significance in academic abstract work, and who want to feel that they are preparing for life. They may very properly use the occupational life of the region as a project to give motive to their studies, which for such children may even become more truly cultural than under an attempt to give culture directly. Personally I would prefer to keep all secondary children, of whatever degree of intelligence beyond actual legal defect, in one school for the sake of the social solidarity resulting. But the school would have to be large enough to allow of inner classification into suitable courses, and probably individualized work would be imperative.

This chapter has, on the whole, been written in agreement with the opinions expressed in the *Report on the Edu-*

cation of the Adolescent, and the pamphlet *The New Prospect in Education*. It may be as well, therefore, before passing on, to note the arguments which may be advanced against this point of view. The main question is whether there actually is a change in outlook in children which demands a different school, and whether this change is closely correlated with chronological age, and only slightly with mental age, independently of the former. The existing experimental work bearing on this ought to be digested and summarized by someone, and, if necessary, further experiments made.

Quite apart from the maturing of sex and the concomitant emotional changes, it is conceivable, and is asserted by many, that children of high intelligence become tired and bored with the kind of work and the kind of play which satisfies their companions of the same chronological age, and prefer playmates of older years if there are not sufficient of their own age and I.Q. available. Of course, in a large school the number of the latter will be enough to form a social group, but that is not the case in a small school. Others may reply that in spite of their wishes it is healthier for such children to stay in their own age-group till after 11. More comparisons of the habits and preferences of children of the same mental but very different chronological age should be made. There have been at least two such comparisons[1] of a scientific nature, but they referred to children of

[1] K. S. Cunningham, *The Measurement of Early Levels of Intelligence*, Teachers' College, New York, Contributions to Education, No. 259. Also *An Inventory of the Minds of Individuals of Six and Seven Years Mental Age*, Grace A. Taylor, No. 134 of the same series, 1923.

mental age 6, including mature adults who were only at that stage of development, and were therefore practically imbeciles. There it was found that the advent of strength and of sex-maturity had in fact made the preferences of the older persons (of mental age 6) different in material respects from those of true children of that age. Such a research for the mental age of 11 would bear directly on the Hadow Report recommendation.

The insistence on the children remaining in the primary school until a definite legal age despite intelligence and attainments reminds one of the same requirement in the case of the German *Grundschule*, and to a less extent of certain objections raised in America to the rapid promotion of the cleverer children. The latter objections in America are, I think, entirely based on a democratic belief in equality taking an unscientific form. In Germany there is probably equally a touch of opposition to anyone getting on better than the rest, but also another argument is advanced, that it is essential for national solidarity that everyone should have the four years of the *Grundschule* in common, with their cultural memories and social comradeship. If after the *Grundschule* all went into a comprehensive High School, there would, of course, be nothing in the above argument, which is only relevant when, as in Germany, there is after the elementary school, as a rule, a separation into different schools. As a matter of fact, nothing was more likely to make the *Grundschule* a failure than this requirement, for most of the better-class children had been accustomed, in the preparatory departments of the *Gymnasium*, to cover the ground in three years, and many of them were intelligent

enough to do so still in the new *Grundschule*. Their parents, therefore, felt that their children were being compelled to lose a year of their lives, and the opposition thus aroused might have defeated the *Grundschule* movement had not the other party given way to a considerable extent and allowed the so-called *Springen* of the third year of the *Grundschule* to take place in some special cases. It is very probable that in England similar opposition will show itself, but not so certainly, for England has not, as Germany has, made attendance at the *Grundschule* compulsory for every child irrespective of social standing or wealth.

Finally, it may be asked whether the child's feeling of impatience with elementary school work, and his looking out to the world and to a vocation, is really due to any change called adolescence, or whether it is not merely a result of the child's knowledge that the usual leaving age for those in his class of life is 14. Does the child in a higher social station feel the same wish? And if so, why is 13 the age separating the preparatory school from the public school rather than this critical age of 11?

CHAPTER XII

EDUCATION IN LATER ADOLESCENCE, INDUSTRY AND EDUCATION

"If the talent for a particular scientific or higher technical profession is really present, then by a thorough training of his talent a boy may secure all that any form of education has to offer."

"On the way to the ideal man stands the useful man."

KERSCHENSTEINER, *The Schools of the Nation*

"Now some man will require me to shewe myne opinion if it be necessary that gentlemen shulde after the age of xiiii years continue in study."

SIR THOMAS ELYOT, *The Boke called the Governour*

"I am persuaded", said Telemachus, "that the great secret of government is to distinguish the different characters of men, to select them for different purposes, and allot each to the employment which is most suited to his talents: but I am still to learn how characters are thus to be distinguished."

FÉNELON'S *Telemaque*, Hawkesworth's translation

THE last chapter was mainly concerned with the education of the adolescent from the very dawn of adolescence at 11 to the end of the compulsory school period at 14. We may in the present chapter continue with a consideration of his or her education as a "young person" after that age. From 10 to 25 per cent. of the children will ideally be in schools leading up to a Leaving Certificate or Matriculation, or in courses in larger schools which aim at that goal. The chief points of debate about such courses are: (1) is there overstrain and overpressure, (2) is there danger of the lowering of academic standards owing to too many crowding into them, and (3) is there too much specialization?

(1) As regards strain due to the exacting demands of examinations in "grammar" schools the medical profession seems to be in no doubt, and roundly asserts that there is very much strain. The Scottish Education Department issued in 1927 a leaflet which spoke of the "undoubted prevalence of overpressure among candidates presented for the Leaving Certificate", and expressed the opinion that "more consideration should be given to the price which individual pupils may have to pay for their (academic) success". They say: "It must be remembered that adolescence is a period of life during which the demands on the vital resources are peculiarly heavy. To subject the tall, slender, rapidly-growing pupil to mental strain, not merely diminishes such physical energy as he possesses, but actually hinders the satisfactory growth of body and mind. It may have a bad influence on conduct, and it certainly reduces the effective power of resistance to diseases, such as tuberculosis and the like. In these and similar cases, ordinary prudence requires that for the time being the claims of the body should take precedence over the claims of the mind."

The problem of overstrain during later adolescence is probably more acute for girls than for boys, and there has been in England a strong agitation in favour of making the usual Leaving Certificate age for girls a year later than for boys. Here, as everywhere, ambition steps in to make harder the task of those who counsel a more cautious haste.

(2) The danger of the lowering of the standards of an academic secondary education arises from the greater provision of secondary-school places, and the greater ease

of obtaining an academic grammar-school education. The argument is that ambition causes too many to crowd into this particular curriculum, and that in consequence there is an inevitable lowering of the standards, since it is not in human nature to fail such large proportions of the candidates as would be required to keep them up. We have heard this argument lately very freely advanced with regard to the universities.

There is no doubt, of course, that only a fraction of the population, probably not more than 10 per cent., and certainly not more than 25 per cent., can really profit by secondary education in the old sense, by what we have determined to call in the future grammar-school education. And it is clearly going to be very difficult to prevent ambitious people from crowding their children into the grammar courses, and pressing for a lowering of the entrance qualifications.

I am convinced that in the interests of human happiness it would be unwise to encourage or permit too great a number to take this grammar course. But as I said in the last chapter, I would like the alternative courses to be given in the same school so that no social distinction need accompany the intellectual differences. And a great advantage of having all courses in the same school is the ease of transfer from the one to the other.

(3) There is also considerable outcry against over-narrow specialization in the higher reaches of the secondary school, especially in England, where such specialization is encouraged by the second School Examination, which comes two years after the ordinary School Certificate, and is much more like a kind of Honours Course.

Indeed, success at the second School Examination in England excuses one year of the Honours Course at the university in many cases, and permits the honours degree to be taken in three instead of four years.

In Scotland the danger is not so great, because of the more general nature of the Leaving Certificate, which comes about half-way in difficulty between the English first and second School Examinations.

Specialization during later adolescence appears to be a natural enough thing, not necessarily to be condemned, provided that the special subject is allowed to ramify and illuminate the whole field of knowledge. The real danger of specialization in the secondary schools is not so much the danger that the children may specialize as that their teachers may be too narrow, and may encourage the cultivation of an attitude of contempt for all subjects except the favoured one. Incidentally, specialized teachers are liable to claim too much home-work, and thus to cause that overstrain of which we spoke above.

It is only the minority of the children and young people, however, who will be in these schools and courses which lead towards professional life. The great majority necessarily will follow occupations in the world of business and industry, many of them highly skilled and requiring keen minds, others demanding less skill or less intelligence, or in some cases little of either. The proper linking up of education with industry is the great problem of the school administrator in the later years of adolescence.

The movements in public education which would attract the attention of a historian of the first quarter

of this century would be the creation of a secondary-school system, the raising of the school age, the improvements in the training, status, and salaries of teachers, and, I think, in the last few years he would report a strong interest in the connection of education with industry, and a number of attempts to bring those interested in the one or the other into contact and co-operation.

Employers in industry or in commerce have not always looked upon education as a blessing. In some occupations they have looked upon it as merely book-learning, unnecessary for the manual workers in that occupation, and indeed tending to give them a distaste for hard toil; while the restrictions on the employment of children following on the introduction of compulsory education diminished the supply of cheap labour. Employers, as a class, must be given credit for having grown out of this view, and it must also be granted that many parents shared their opinions and resented education. Everywhere nowadays the tendency is for employers to co-operate more and more with education authorities, who on their part are learning to look upon education as being more than book-learning.

In the industries, where things are made, what is principally required from the workman is not book-learning or accuracy in spelling and arithmetic (though more of this is needed than formerly) but some skill or other, ranging from the rather crude skill required from the so-called unskilled labourer, up to the extremely refined dexterity of the cabinet-maker, mechanic, sign-painter, or other craftsman. Now schools consider it only

to a very limited extent their business to give dexterities to their pupils, and I think it would be good if this side of education were rather more emphasized. Of course, some skills are very well taught. Writing and drawing train hand and eye, and handwork classes are far more real and alive than was the case twenty years ago. The junior work in plasticene, paper-folding, light cardboard, etc., and the senior work in wood and sometimes in metal, give a general training which must be of the very greatest advantage to an apprentice later. And the honour we pay to those who excel in games, not to speak of the salaries we pay to the masters of dexterity of the music-hall stage, shows that skill is still something which mankind admires. It is strange that its standing in the school is so low. For there is no doubt that in the minds of schoolmasters intellectual distinction is much more prized. Probably it is along the line of advance in art and music that most can be hoped for.

It is with the Middle Ages that one associates the highest ideals of personal craftsmanship. Possibly this is an error. Certainly in some crafts the high-water mark came later: for example, in printing, and in all others which were not invented till after the mediæval period. But even in printing, it appears to an outsider that the art reached its pinnacle soon after its birth, while the influence of the hand-written book was still strong. Now the Middle Ages were a time of apprenticeship to crafts, and the necessary skill was acquired under the instruction of a master who personally supervised his apprentice, was himself skilled in the whole of a process, and in whose house the apprentice usually lived, receiving moral

and religious supervision at the same time as craftsmanship was being developed. After seven years the apprentice became a journeyman, not merely by the passage of time, but by producing a specimen of his handiwork, or, in other words, by passing an examination in his craft. Then came his wander years, when he journeyed from place to place, and learned how his craft differed in different regions. Then his "masterpiece" was produced, which entitled him to be called master of his craft, and he himself settled down and had a workshop and apprentices of his own.

This was a system of education, and it is a commonplace that the industrial revolution destroyed it. It did so partly because of the rapid progress in mechanical invention, which so quickly changed the nature of many crafts and made personal skill less necessary except for the very highest type of work. And partly and perhaps mainly it did so because of an indirect result of these inventions, which led to the use of power on a large scale, at first water-power and then steam, and hence to the gathering together into one building of a number of master-workmen, who separately had insufficient capital to own the power-machines now necessary, and became by the change in effect degraded to be the workmen of someone who had. Such workmen in a factory were no longer in a position to train apprentices properly. They had lost in prestige, they were kept more and more themselves to one part of the job, their homes were no longer the places of excellent moral training they had been. The distinction between a master-workman and a journeyman became almost entirely lost, and apprentice-

ship tended to become a mere putting in of time till one could become a more highly paid workman, more highly paid than an apprentice, but not of very high standing and prestige. A class of society had, indeed, been destroyed.

The industrial revolution also swamped the old school system, and the history of education in the nineteenth century was largely a record of the gradual taking over by a state system of what formerly had been done privately, by the church, and by endowments. Similarly the twentieth century will be, I think, largely devoted in educational matters to the taking over by a state system of what was formerly done by apprenticeship. The need was not seen so quickly of this as of the other. For apprenticeship in its outward forms did not disappear at once. And the industrial revolution did not take place in every trade at the same time. Indeed, in some, as, for example, in fishing, it did not begin in any large measure until the advent of the petrol-engine. But there is, I think, the same need for the state school to replace apprenticeship or supplement it in very important ways, as there was for the state school to replace the private school.

This will probably be done mainly by continuation classes, which need not all be held in the evenings, and which ought to be run jointly by the education authorities and the master-workmen of the trade concerned. The teachers themselves will also have to be master-workmen who have had a training in the art of teaching, which can be given them by demonstrations and lectures while they are themselves teaching, and need not be so exacting as to repel men who are after all skilled masters of a craft, and not to be treated as though they are students

in training as teachers. Properly done, however, such a short course of training is appreciated by them.

The presence of the master-workmen on the committee of management also ensures that there is smooth co-operation between the classes and the trade as regards the rules of admission to the trade and of apprenticeship. Some of the classes will be restricted to those who already are recognized apprentices or learners in the trade, so that there will be no suspicion of providing a new entrance not under the control of the corporation of members of that trade, which under our present social arrangements is the body generally recognized as having the right of admission, provided at least that nothing is done by way of extreme limitation of apprentices or the like which would be detrimental to the general public interest. The terms of apprenticeship would include the requirement to attend classes and to pass certain tests, which would replace the tests formerly performed by the journeyman and the master, but would, of course, be of a very different nature in most trades of to-day, though in some the making of pieces of specimen work might very well again form a milestone in the development of the craftsman.

The above is almost a description of the system of continuation classes in being at Edinburgh, which owe a great deal of their success to their organizer, Mr. David M'Nally, and admittedly also to the example of Munich many years ago under the inspiration of Kerschensteiner. If compulsory continuation classes such as were contemplated by the Fisher Act of 1918 are ever to become a reality, it is probable that it will be along lines such

as these, and not as mere continuation of "school". Germany has had the advantage of compulsory continuation class by-laws for the whole of this century, and there some trades at least—for example, the metal industries—have taken advantage of them to make their apprenticeship a real time of learning and testing. As far as I can judge, indeed, apprenticeship never fell quite so far from its original state in Germany as here, probably because of the later entry of that country into the factory condition. I remember my surprise, twenty-five years ago, at seeing set out in the town hall of a South German market town the *Gesellen-stücke*, the sample pieces of work done by the apprentices of various trades who that year reached the end of apprenticeship and became *Gesellen*, or journeymen. Nor, I think, has the distinction between journeyman and master ever disappeared so completely there.

A German organization, formed by the craftsmen themselves, for controlling technical education and its connection with apprenticeship is *Datsch*, an artificial word made up of the initials of the title *Deutscher Ausschuss für Technisches Schulwesen*. It has published what should be the year's work in each year of apprenticeship and influences strongly the examinations which decide the passage from one grade to the next higher.

It seems very desirable that the age of entry of boys and girls to a trade should be the same as the age up to which attendance at a day-school is compulsory. This is not the case in Great Britain in many trades. The gap which we shall speak of below, between 14 and 16, when the state again obtains some measure of control

over children who have entered employment, is also a gap between the school leaving age and the usual age of commencing apprenticeship, 16. If the school age became 15, and also the apprenticeship age, this gap would be closed, as it is in Germany, where, however, the age in question is 14, which seems rather young for the workshop. One's opinion on this latter point is, however, liable to modification after seeing apprentice workshops, confined entirely to the instruction of apprentices under specially chosen master-workmen, in which the compulsory school-work required by German law is given in the same building, under a head master who is also a Diplom-Ingenieur and a master-craftsman, and master of the apprentices in their workshop practice as well.

Another difficulty in connection with school age and apprenticeship age is in the opposite direction. Not only is it difficult to become apprenticed before 16, but it is difficult and in some occupations definitely impossible to be apprenticed after that age. This means that the pupil of a secondary school (grammar school in the Hadow Report nomenclature) cannot be apprenticed, for his school course does not end till after 16, and is, indeed, meant to continue to about 18. In Scotland, where the rigid requirement of the English secondary school, that the pupil must remain till the course is finished, is not in force, it is true that secondary-school pupils often leave at $15\frac{1}{2}$, after passing an examination equivalent to the former Scottish Intermediate Examination for Secondary Schools. But this only means that they were not really pupils of the secondary school in the sense

of the above English requirement, and that in Scotland the secondary school is already in some measure a comprehensive high school, as has been recommended in these pages elsewhere.

For a pupil who has completed a secondary-school course up to the leaving certificate to be unable to apprentice himself to a skilled trade such as mechanic or pattern-maker or printer, however, seems a pity. No doubt the curriculum of the secondary school is intended for "black-coated" occupations, but if an intelligent child who has wished to complete his school course in the academic curriculum should then nevertheless wish to become an apprentice, it seems a mistake to prevent him. Indeed, when the attention of the trade unions is drawn to this anomaly, it might be expected that they would make some rules which would permit apprenticeship, at least in exceptional cases, to begin at the later age, or possibly to continue to apprentice boys at 16, but *second* some of them for two or more years of study in a secondary school.

Considerations such as the above will have to be borne in mind when the school age is raised to 15, and especially if there should ever be any question of raising it above that age. There are some who consider that merely to raise the school age will not necessarily be a good thing, if it means for a majority of the children only a continuation of what schooling at present means, and does not imply a closer approach to business and industry. They will be answered, it may be hoped, by the growth in the right direction of the "modern" schools, the advanced divisions and central schools, which are to take

the majority of the pupils over 11 or 12. Still more would have similar misgivings if an age of 16 or more were in consideration. Most of the latter believe that co-operation with industry is much more likely to result from compulsory continuation schools than from raising the day-school age.

The education of the youth and maiden of the later 'teens is seriously hampered by the period of neglect which so often follows their departure from day-school, and many of the complaints of employers about the poor education of those who apply to them are no doubt due to the regression which goes on in this period. The gap spoken of above, between the compulsory school age and the age of apprenticeship, though serious enough, is not so serious as another hiatus which occurs between the same ages of 14 and 16. During those two years the state loses all educational control of the children, and has not even any efficient means of knowing where they are and what they are doing, unless they stay at school. The majority do not, but pass out at 14, and for two years it is the business of no state official, except the policeman if they break the law, to keep touch with them.

Up to 14 there is compulsory attendance at the day-school, and so the state keeps control of the children. After 16 there is compulsory insurance and unemployment benefit, and when young persons are unemployed it may legally be made a condition of receiving unemployment benefit that they attend a continuation school (either night or day), for the purpose either of retaining their employability in their chosen trade, of improving their employability in that trade, or of being trained in

some other trade. After 16, therefore, there is again at least some measure of state supervision over the young person. But between 14 and 16 there is no such control, and there is grave reason to fear that many children regress very considerably in their educational standards and their employability during those two years. To bridge the gap it has been recently (1927) proposed by the "Malcolm Committee" to institute "Working Certificates", which would be a kind of passport issued to every child on leaving school to indicate that he or she might be legally employed, and which have to be "visaed" on each occasion when the child obtains or loses employment, thereby giving a measure of control and opening the possibility of at least advising and possibly compelling the unemployed child to attend continuation schools or unemployment classes.

The whole of this discussion is a commentary on what was said in another chapter, that there is to-day a distinct tendency towards more and more state control, a tendency opposed to the extreme freedom, including freedom to remain uneducated and unemployable, which was characteristic of Victorian thought, but which began to change, in the realm of education, when the Acts of 1870 and 1872 were passed making school attendance more or less compulsory.

It will doubtless occur to the reader that the simplest way of bridging this gap between 14 and 16, and improving the education of the adolescent, would be to raise the school age. The Hadow Report definitely recommended that it should be raised to 15 at some early date, and in 1928 the Minister in charge of education,

Lord Eustace Percy, made a statement, based on estimates of the child population, which enabled the prediction to be ventured that the age might be raised to 15 sometime before 1938 without any particular difficulties of finance or school accommodation. The statistical reasons on which this prediction is based are these. There is at present passing through the schools a wave in the child population caused by the low birth-rate of the war years 1915–18, followed by the abnormally high birth-rate of 1919, which was then followed by a period of steadily decreasing birth-rate due to the economic consequences of the peace. The trough of this wave was, in 1928, in the upper standards, central schools, and advanced divisions of the schools, which were then at their lowest in population. Starting from 1929, this section of the school will begin to feel the crest of the wave as the numerous children of 1919 and 1920 reach it. By 1933 the population of the upper standards, central schools, or advanced divisions will be at a maximum, and up to that date it will probably take Education Authorities all their time to provide proper "modern school" accommodation for the growing numbers of children of that age, without any raising of the compulsory age. After 1933, however, the numbers in the upper section of the compulsory school will begin to come down again, and by 1938 will have reached so low a level that the compulsory age could then be raised to 15 without any strain on either accommodation or teacher supply, for the number of children between 11 and 15 then will be no greater than the number between 11 and 14 in the year 1933. Somewhere between 1933 and 1938, therefore, we may

expect the compulsory age to become 15. But it will be a decade or two at the least before it becomes 16. The gap will therefore remain with us for some years yet, and the idea of working certificates is perhaps the best palliative for the troubles which the gap brings with it.

It would be unwise to leave the subject of raising the school age without reminding the reader, especially the foreign and American reader, of what Lord Eustace Percy emphasized in the speech in which the above argument was developed, that it is at present open to any parent to raise the age of free education for his child simply by keeping him at school. Authorities are bound to provide accommodation for such children up to 15 who voluntarily stay on at school, and this accommodation would ordinarily be modern school accommodation, though this is not a part of the legal obligation. And secondly, in England at least, it is open to any Authority to raise the compulsory school age to 15 in its district by local by-law, after consultation with the Board of Education, and one or two places have already done so. There is, I understand, some doubt whether this power is possessed by the Scottish Authorities.

One excellent result of the introduction of the "working certificates" referred to above, or of some other means of keeping touch with children after they have left school, would be that great advances could be made in vocational advice and guidance, for the very children who most needed such advice would come under observation, and also statistical confirmation of the helpfulness of such advice as was given could easily be obtained, to assist

in future advising. At present, advice is, of course, frequently given to children and their parents by schoolteachers, based on a good knowledge of the child's schoolwork, a less accurate knowledge of his other capacities, such as special dexterities, and only a poor knowledge of the local and other possibilities of employment. The advisory bodies which have grown up during the past decade, some under Education Authorities and some in connection with the Ministry of Labour and the Labour Bureaux, possess the great advantage of a knowledge of the local employment market. A usual plan is to arrange for a conference, towards the end of the child's schoollife, between the parent, the school head, the secretary or other representative of the advisory committee, and the child, at which the possibilities can be discussed and the child's potentialities set before his parent and him- or herself.

There is clearly room for scientific work in determining what qualities are required by each separate occupation, and how the possession of these qualities can most accurately be determined in the child. More than a beginning has been made with such work in several countries. In the United Kingdom, the National Institute of Industrial Psychology has accumulated much information as to the qualities requisite in various occupations, by sending its trained investigators to observe, to take part in the operations of the trade, and to apply tests to the journeymen (or women) of known excellence or mediocrity. And in the same way it has developed tests likely to assist in predicting the trade in which a particular child will have most chance of success. An experi-

ment on a considerable scale has been carried out, and is being extended, in London, in which a group of children who were advised as to their appropriate occupations was followed up, and compared with another which had only enjoyed the benefit of the ordinary guidance, or lack of guidance. A similar experiment is now being begun in Fifeshire.

The general plan by which tests capable of predicting success in an occupation may be made is as follows. Tests of various sorts, which *a priori* appear likely to correspond to the dexterities and abilities required in the trade, and which may include physical and medical tests, are given to a group of workmen already engaged in that occupation, whose excellence in its various degrees can be ascertained from independent testimony. By mathematical devices which replace the crude trial and error which obviously could, if sufficient labour were expended, accomplish the same end, there is then found that combination of the tests used which most closely corresponds with the actual degrees of excellence of the workmen. That is to say, some of the tests are found to bear little or no correspondence to the order of merit of the workmen and are discarded. Others bear some, but not much, and are given only a small weight in the final estimate; while others show a considerable correlation and are weighted heavily. Other considerations which cannot be explained here also come into account, and there results a battery of tests, the weighted scores on which correspond more or less with the known order of expertness of these workmen.

The next step is to apply these tests to a group of

apprentices just commencing in this occupation and venture a prediction as to their success in it, and after the lapse of some years to ascertain by inquiry in the trade to what extent this prediction has been fulfilled. The information thus obtained may enable improvements to be made, and finally a team of tests is at hand which may with reasonable confidence be used to advise a young person as to his or her likelihood of success, and therefore of happiness, in that occupation. In passing, it may be remarked that in the following-up period all investigators find their efforts much hampered by the existence of the above-mentioned "gap" between 14 and 16, during which no state control is retained over the child.

It is an obvious criticism of such endeavours to point out that in very many cases the question for a parent is not so much the obtaining of the right occupation for his child, as the obtaining of any employment at all. But though this is true enough, it does not seem a reason for refraining from the endeavour to reduce as much as possible the number of misfits, which in itself might be expected to do something towards restoring industrial prosperity. In Hamburg, where the system described is in active operation, I was assured that four-fifths of all children leaving school pass through the Vocational Advice Bureau, including children of all social classes, and that a large number of these, namely those cases in which the school record does not already determine the type of suitable occupation, are given psychological tests to assist in the decision, in a series of rooms which might well be the envy of a psychological department in a university college. Yet Hamburg, in the years 1925–6

immediately preceding, had had as much unemployment as any British city of similar situation, without thereby finding the advisory functions of its vocation bureau useless. Indeed, all united in agreeing that vocational advice had been a major means of diminishing the volume of unemployment.

It will have occurred to the reader that the period immediately after the day-school age is one in which voluntary agencies of all kinds are most in evidence in the education, especially the moral education, of our young people. One might say with some truth that the whole aim of many such is to get young people through this period successfully without the formation of bad habits either of a positive or a negative nature, with aspirations undimmed, and untarnished virtues. It is the duty of all teachers, especially those whose pupils for the most part leave at 14, to help on such work either by encouragement or participation, and to keep in touch with their past pupils and informed about their occupational prospects. Former pupils' associations and clubs are a great help in this, and they should not be confined to football clubs. Excursions, camps, reunions, country clubs, are various devices in this connection.

Finally we may note that, while the duty of schools for adolescents may be in large part to train for special work in the world, either because of the need of the world or because of the interests of the young, it is also their duty to see that the occupational mannerisms, outlook, and prejudices do not obscure the common humanity of all. The school of the adolescent must provide all its pupils with a common background of some sort which

will be a link between the plumber and the solicitor, the farmer and the factory mechanic. "It is a common observation", says Professor Ernest Barker, "that men's minds are 'subdued to what they work in', and that their ideas, assumptions, and outlook on life may all be coloured by the material they handle, and the temper they insensibly form, in the course of their daily work." And in a passage which will be well known to the reader William James said something of the same sort. "Already at the age of 25 you see the professional mannerism settling down on the young commercial traveller, on the young doctor, on the young minister, on the young counsellor-at-law." And, one might add, on the young coal-miner or the young plasterer. "You see the little lines of cleavage running through the character, the tricks of thought, the prejudices." Part of the duty of the adolescent school is to keep the wider outlook, to see the whole as well as the parts, and while making good thinkers, good workmen, and good tradesmen, to make them all equally men and women.

CHAPTER XIII

ADULT EDUCATION

"The aim of adult education is not to give the student a better place in the labour market, but to give him the opportunity of living a fuller and more interesting life, and to equip him for a more intelligent citizenship."

Moberley Report on *The Tutor in Adult Education*

No doubt, *pace* Dewey, education at any stage of a man's life is a preparation for some later stage. But no doubt, also, the best preparation is achieved when, without shutting our eyes entirely to the needs of to-morrow, we treat education as an end in itself, motivated not by the needs of to-morrow, but by the desires of to-day. And certainly, if the idea of "preparation" for the later stages of life is allowed to dominate education to such an extent that education is looked upon as finishing at some point, after which the trained adult proceeds to function as an educated man, there will be an end of education in the true sense.

For in that true sense education never ceases, but goes on throughout life. Not only does the education of life itself go on, but conscious education, and even schooling, should go on continually if life is to be lived completely and with full enjoyment. It is this schooling for the sake of full appreciation of life, of complete living, of the satisfaction of individual curiosities and yearnings, that is meant by "adult education" in the sense in which it is to be spoken of in this chapter.

In what has been said elsewhere on vocational education,

the claim made by many has been admitted and even urged, that it is through studies beginning with his vocation that many a boy or man can attain to culture. The psychological make-up of the human individual living in a human community is such that for many the chief motive to effort is found in the approval, or in the economic demands, of society, or in the situations, business and other, created by its structure. But it has also been said elsewhere in this book that society exists for the individual, not the individual for society: and after the period of adolescence, when the impulse to get to work at some occupation is so strong; after the period when the apprentice or young journeyman, whether in a manual or a mental trade, is intensely busy learning the details of his profession—there comes a time when the niche which is to be filled in the structure of society is more or less settled, and the individual can turn again more to his education as a man, meeting other men on terms of equality because he is a man, and can escape from the pressure of vocation.

Do not imagine that I am saying anything so crude as that, after some age such as 25, a man need no longer attend to his vocational or professional education; or that between the ages of 15 and 25 he need attend to nothing else. Of course, professional and vocational education also goes on all through life, and, of course, the adolescent and the young man care for "general culture", and will, indeed, seldom or never become cultured adults unless during that crescent period their appetites in that direction are catered for and sustained. But the fact remains that during those ten

years the question, What am I going to be? is an imperative and ever present one, and that after about 25 it has largely answered itself, and the actual routine and details of the chosen occupation have been to a considerable extent mastered. Indeed, given honest attention to the questions of business during business hours, it may fairly confidently be said that outside those hours it is attention to general culture that is more likely to lead to increased efficiency in a vocational sense. Having passed through the period of sorting and training, men may come together again just as men, meeting on a common ground of culture and appreciation, talking shop if they want to, but only on condition that their shop talk illuminates some general human problem or interest.

It is in this sense, I think, that the phrase Adult Education is properly used nowadays. It is not vocational education. Of course, many classes and institutions exist to give vocational instruction to adults. Universities do so, for instance, far more than they give culture, and it is about as difficult for an older research student in the chemical department to find some common ground of intellectual conversation with a similar student in the classical department as for a tram conductor and a writer to the signet. And many private organizations, chiefly by correspondence, endeavour to increase the earning capacity of their clients, with extraordinary success, testified to by the letters published in the advertising columns of our papers. Technical societies and associations, with their meetings, papers read, journals published, all contribute to the continued occupational train-

ing of the members of the various professions and trades concerned. But although these activities occur among adults and fulfil a useful purpose, they are not what is mainly meant when the phrase Adult Education is employed. Adult Education means general cultural education, for the individual's own personal sake, and not for the sake of his job or his specialized function in the community. In accordance with that paradox which is so often found true in both education and life in general, society will in fact be best served if the individual is thus made the aim, for the solidarity which comes of common interests and a common culture is more important than the undue increase of specialization. Society needs specialists, and they need each other: and self-interest with the instinct of barter may, as Adam Smith thought, be enough to hold them together in association. But I do not myself think so, and I would like to think that a feeling of brotherhood, akin to but on a higher level than national patriotism, can be fostered by studies which appeal, within the limits of the individual intelligence, to men of different occupations. I think I must surely at heart be a Victorian. I know that is a dreadful admission to make, and that it is fashionable to emphasize the ugliness, the smugness, and the heartlessness of that age, and to decry even its intellectual and scientific achievements. Goodness knows that its buildings and its dresses were ugly, and its schools and its slums awful. But there was something true in its admiration of the cultured mechanic, the baker who was a distinguished botanist, the blacksmith who wrote poems. Not everyone engaged in one of the necessary technical occupations can rise to

those heights, but most can find some interest, of an intellectual or æsthetic nature, in the pursuit of which they can meet groups of their fellow-men of other occupations, and "widen their means of intercourse".

The story of Adult Education in Britain during the last hundred years shows certain clearly marked features. In the early days of that period it was largely concerned with educating adults whose schooling during childhood had been neglected, in teaching them to read and write. There were various agencies for disseminating knowledge by weekly educators, by cheap encyclopædias, and similar means, which may be taken to have grown into the huge popular educative press of to-day. There were agencies like the Mechanics' Institutes which in their inception at least appealed to the vocational motive, and wished to make the applications of science to the occupations understandable by the mechanics engaged in them.

As the nation took over the control of elementary education and made attendance at school compulsory, the need for adult education to teach the elements of reading and writing became less and less, and has almost disappeared. In America, it is true, there is the special problem of the immigrant, who, however, to-day, by the operation of the immigration laws, cannot be entirely illiterate, but who needs elementary instruction in a new language, and the history and methods of government of a new country.

The professed vocational motive of the early Mechanics' Institutes and similar bodies soon disappeared. Indeed, there was soon noticed a feature which is always a difficulty of adult education, no less to-day than then.

The people who became members of the classes included only a minority of "mechanics" and a majority of clerks, teachers, and other people who already were engaged in mental rather than manual occupations. This is still a distinct tendency in classes for adults, and it may even be expected, when educational opportunity becomes still more equal in childhood, and vocational guidance more effective, that there will be fewer in the ranks of manual labour who are interested in intellectual subjects. Many of the members of those early classes who were actually manual workers were no doubt so because of lack of opportunity, and would to-day be found in other occupations. There is, therefore, a distinct challenge to those engaged in providing adult education to make their methods and their subjects such as will appeal to the mass of the manual workers, whose interests are always in things and concrete processes and not in abstract ideas. The fact that a large number of such men have hobbies is probably the hopeful feature.

The other change which has come, or rather is now coming, over adult education is one which is seen in every branch of education—increasing organization, and increasing state co-operation or control. The whole story of British education in the nineteenth and twentieth centuries is one of four stages. The previously existing machinery is swamped by the Industrial Revolution and breaks down. Private philanthropy and private effort step in to do a little to correct this, and to do a great deal towards arousing public opinion. Voluntary organizations are created, or existing organizations utilized, to do this on a larger scale. Finally, the state, represented either by its

central government or its local government, begins to co-operate, and tends to take complete charge. In no branch of education has this last tendency been completely realized in Britain, and this is certainly good, for there is much value in voluntary effort and much danger in bureaucracy. But the advantages of financial support, of continuity and guarantee of standard, and freedom from sectarian influence, are sufficient to make a considerable amount of state control well worth while.

The present movement for adult education in Britain can be seen now, on looking back, to have had three steps in its development. About half a century ago Oxford and Cambridge began the University Extension movement, which sent university lecturers to give courses on historical and literary subjects in towns and villages, where the lecture was commonly followed by an hour during which certain of the audience, who had definitely enrolled as students, held discussions, and submitted essays, to receive certificates at the end for satisfactory work. The next step began with the first years of the present century, when the Workers' Educational Association was formed, and tutorial classes, lasting for three years, and implying a much more continued application to the course, began to take the place of the single-year courses formerly most usual, though these remained as introductions to the beginners. Co-operation between the Workers' Educational Association and other voluntary bodies on the one hand and the universities on the other, including now the new provincial universities, became the usual thing, for the lecturers were mainly young university men. But many of the students themselves dedicated them-

selves to the work, and some of the most distinguished names in education to-day are those of such men, who frequently carried on classes as tutors in one village on one night, while attending classes in a town as students on another. Some districts obtained resident tutors, who became centres of culture in their districts, and many of whom are now well-known for their work in wider spheres.

The third step was the beginning of the acceptance of public money and a measure of public control. At about the time of the Great War the Education Authorities had already begun to show a practical interest in the movement, but in the ten years since the close of the war that interest has grown exceedingly, until now a regular system of co-operation between these authorities, the universities, and the voluntary bodies, of which the Workers' Educational Association is still much the largest, has been evolved; the voluntary bodies organizing and making articulate the demand for classes, the universities supplying the lecturers, and the Education Authority controlling the expenditure and contributing to it. It must not be imagined that all adult education classes are run by a tripartite body of this description, or that all public money spent on them comes through the Education Authorities: but this tends to be the arrangement. The English Board of Education issued Adult Education Regulations in 1924, but the movement lagged behind in Scotland, though it is now being vigorously taken up by joint committees of each of the universities with the local voluntary bodies and authorities, and a Scottish Committee of the British Institute of Adult Education has also been formed. Over the whole of

Britain the most remarkable feature of the movement is the smoothness of co-operation between the different bodies interested, and this appears to be due in large measure to the statesmanlike way in which the Workers' Educational Association has managed its affairs.

A new factor of another sort has also come into the situation since the war, with the development of wireless broadcasting. With the cinematograph, broadcasting forms a new means of influencing the masses of mankind comparable in power with the Press. Broadcasting has, however, shown a greater interest in the educational side of its work, and a greater adaptability to this side, than the picture-house has done. This appears to be due to several reasons. In the first place, broadcasting is not so mechanical a thing as the cinematograph. It is not even so mechanical a thing as the gramophone. As we listen, although we cannot see the speaker, we know that he is speaking at that very moment, and we feel ourselves in contact with his mind in a way which cannot be said of viewing a film made months ago or of listening to a mechanical record. As a consequence men of distinction in various spheres are willing to broadcast, who would be unwilling to take part in a film. Moreover, they are able to do the one and not the other, for a special training and talent, with great sacrifice of time, is needed to act in a film, whereas the talents required to broadcast, though they also are distributed among mankind very unequally, are to be frequently found in distinguished men and women of all professions—indeed, are much the same talents as lead to success in many professions.

If we take education as the influence of a trained and

distinguished mind upon an immature mind, then it is evident that many immature minds will, through the influence of broadcasting, come under the influence of more distinguished minds than they could often hope to meet among the ranks of their teachers, and it is probably in this that the power of this new factor will lie. Efforts are being made to co-operate with the school-teacher, and to supply for all listeners, including the adults who are our present consideration, reading lists and inducements to continue the studies by reading which have been begun by listening. If broadcasting is looked upon as merely a kind of correspondence college, however, it will be no more than a correspondence college, and its function will sink to that parodied by the American magazine article, wherein it is described how the discovery was made that information could be absorbed during sleep by wearing the headphones and doing a kind of unconscious listening in: and where advanced courses were planned for the very absorbent among the students, which were the same as the ordinary courses, only backward! No, the special field of broadcasting is undoubtedly the opportunity it offers for hearing distinguished speakers, distinguished historians, distinguished scientists, distinguished scholars, and men of action of all sorts, and the inspiration it thereby can disseminate.

There can be no denial of the fact that all adult education of the last half-century has owed a great deal to the political motive. Adults who stand in greatest need of these opportunities are very naturally those adults who until lately had least political power, and upon whom the reorganization of society due to machines, improved

transport, changed methods of finance, exerted the most pressure and hardship. Especially at the turn of the century, the desire to study these matters, of a socio-economic nature, in the hope of obtaining light on the difficulties which beset them and of benefiting their class, was certainly a strong, and also an easily understandable, excusable, and, indeed, highly laudable motive for many who attended. Classes on such subjects were the most numerous and the most patronized. Even to-day, when a special lecturer is appointed at a university to organize extra-mural adult education, he is not infrequently attached to the department of economics, and is usually qualified and interested in the kind of subject spoken of above. It is equally undeniable that much antagonism and misunderstanding of the whole movement arose from those who looked upon it as solely a system of political education designed to attack capitalism and conservatism. It is to Mr. Albert Mansbridge and the Workers' Educational Association that the steady disappearance of this suspicion has been due: for the Workers' Educational Association, while admittedly, I think, composed for the most part of persons who are in considerable sympathy with politics of the Left, has also shown that it is possible to keep such opinions strictly in their place. In consequence many have supported them who are of very different opinions, for a desire to discover the reasons for the shortcomings of our political and social system is not unknown among the most conservative. The usual difficulties with extremists have also arisen, and there exist organized bodies who desire much more propagandist teaching than is possible under the banner of un-

sectarian and non-political committees, and who refuse, or who find it incompatible with their principles, to co-operate.

The tendency for adult education classes to have an economic or even a political flavour has, however, long ceased to be marked, and to-day classes of which this can be in any sense said are far outnumbered by classes of which it certainly is not true. History, Literature, History of Art, Drama, are all classes of a general cultural nature only. The main tendency since the issue of the English Adult Education Regulations seems to have been one to extend the base of adult education downward, to include men and women to whom the predominantly intellectual courses make no appeal. Adult education, like all education, must remember the existence of individual differences, and of a large majority of mankind who, to put it bluntly, are not by any means "brainy", but who require all the more to be educated. The leaders in every educational movement tend to be such "brainy" people, and tend to think that most other people can follow chains of reasoning, can appreciate abstractions, and can achieve a mastery of vocabulary, much as they themselves can, wherein they are mistaken. The leaders of the Adult Education movement, however, unlike many intellectuals, when they discover the existence of a mass of unintellectuals, do not proceed to ostracize them, but have especially in the last decade tried to find a means of approach which will humanize without demanding high "I.Q.s".

In this broadening of the base of adult education, the Education Authorities have played the chief part.

The universities are naturally most interested in the "higher" education, and their co-operation in the provision of educational facilities of a less advanced standard, courses in hobbies, in simple art-crafts, shorter and more elementary courses in other subjects, is neither so necessary nor so likely to be given enthusiastically as in the Three-Year Tutorial classes, which endeavoured to maintain, and to an extraordinary extent succeeded in approaching, the standard of University Honours courses.

In adult education, as in all education, the most important factor is the teacher, and the provision and training of tutors for adult classes is perhaps the most important necessity of the movement to-day. Since I began to write this chapter, there has appeared the report of a committee, financed by the Carnegie United Kingdom Trustees, and appointed by the British Institute of Adult Education and the Tutors' Association, which has carefully considered this need and presents weighty recommendations. It would appear that the universities, which have already done much for adult education, must bear a considerable share in training tutors, who in increasing numbers will be required to give full time to this work, though the demand for the part-time services of the regular university staffs and of other qualified teachers will not grow less; and the lead given by some universities of instituting regular departments of adult education is likely to be followed by all, in which case such departments, in co-operation with some of those already engaged in training other teachers, and with those who know the particular needs of this special work, will probably train tutors who are willing to devote

themselves to adult education, and give short courses to others giving part service, on the model of existing courses, some embryonic and all tentative, at Oxford, Nottingham, Reading, and elsewhere.

Among the recommendations of the committee, none are more interesting than those directed towards assisting students from adult classes into regular university courses. It is clear that this will always be exceptional, and it would be a wrong point of view to think that the aim of adult education should be university training of as many as possible. But for some it is clearly a duty of the community to provide such opportunities, and the proposals to Education Authorities to include adults in their scholarship schemes, and to universities to interpret still more liberally their already existing regulations for what is called mature matriculation, are calculated to add to the number of such mature students at universities. It is tempting to wonder what influence such students, if they come in any numbers, will have on the universities. They are likely to bring a spirit of disinterested enthusiasm for culture to swell the amount of such already in existence, which is not always as large as one could wish: for universities are tending more and more to be vocational in the outlook of their students, who may have a real love of learning, but find it necessary, both by the demands of their future profession and by the regulations of the university itself, to attend rather exclusively to studies which for them, at least, are bread-and-butter studies. "Cramming his head, to butter his bread, has been the lot of man" in too many instances, and if mature students can help in bringing back a more

liberal view they will be doubly welcome, both for the opportunity of aiding them and for the good they bring.

Another way in which adult education may influence all education is by the example of its democratic organization. Students themselves form a large part of the committees of organization, have a good deal to do with running the classes, with choosing the tutors, and selecting the subjects of study. Students of our ordinary universities, although they govern themselves in a number of ways, do not have much say regarding the curriculum and the form of study best suited to present-day needs. My own experience is that when they have expressed themselves on these matters, they have shown great wisdom and a freedom from hampering red tape not to be expected from their masters. The students of more than one university, for example, have, through their official spokesmen, urged a reduction in the number of lectures, and their replacement by discussions and seminars quite of the Adult Tutorial Class type. It is true that those of us who have endeavoured to act in this way have found members of our classes less articulate than could be wished, and still in a majority of cases desirous of hearing words of truth from the chair which they can get down in note-books. But not all are like that, and that any are so is as much the fault of university examinations and economic pressure as of their own selves. Mature students are invaluable in making a seminar go; and if they come in larger numbers reforms may be accelerated.

The Adult Education movement may well also influence the ordinary day-school. It is calculated to make it less

a place for a boy to escape from, if he knows that his elders gladly return there. If, as has been suggested, new school buildings should contain special rooms equipped for adults, a step will have been taken towards making the school a community centre towards which all look, and that will change subtly the attitude of the young adolescent to it. As representative organization becomes more and more distant (inevitably the case with increase in size of administrative districts), there is increasing need for direct contact between community and school; and while keeping well within the regulations made by their rather distant representatives, such a community can, nevertheless, influence the tone of a school provided it keeps in touch with it and with the process of education.

A chapter on adult education would be incomplete without some account, however short, of the Folk-high-schools of Denmark, now being largely imitated in Germany, which owe their inception to the influence of N. F. S. Grundvig (died 1872), a Danish pastor, patriot, and poet. The main object of the Folk-highschool has been said to be to help the pupils to realize their worth as men and their heritage as Danes. The Folk-highschool pupils are in age from 18 to 25, and of both sexes. The courses for the young men are generally in the winter, lasting for five months; those for the young women for three months in the summer. The pupils gain no certificates, do not attend for vocational reasons, and, except in the most indirect fashion, cannot be said to improve their worldly prospects in any way by attendance.

The Folk-highschools are residential; simple, austere communities. Especially in the early years books were

decried, and the appeal of the spoken word, and of activity and common life, relied on. Each school is started privately, and invariably as the outcome of someone's idealism and enthusiasm. But after a school has survived and succeeded it may obtain a certain amount of state support, given partly to the pupils and partly to the institution. In all Folk-highschools there is much singing, folk-dancing, and work about the house and farm, with a cultural curriculum based on history and the mother-tongue. The movement is essentially a rural one, and has not to anything like the same extent reached the town artizan. Its existence and ideals have, however, also influenced the methods of teaching in all schools, which have become freer, more emphatic of communal life, less bookish than they otherwise would have been.

And lastly, the British Empire has a peculiar problem of adult education in the training of the native races in those dependencies of the Crown which are not yet self-governing. Adult education there means to a great extent elementary education or vocational training in handicraft, though in every such region there is also the problem of the education of the native administrator. The language problem is an important one, and with it is bound up the question whether it is a development of the native culture which is aimed at or the imparting of European culture and civilization. The British policy at present is the former; that of France, if I rightly understood her representatives at a conference in 1928, the latter, their belief being that what they have to offer to the native is inseparably bound up with the French language and literature and thought. And as the Rector of the Univer-

sity of Paris, M. Charléty, very appositely said, even when we develop native culture by rejecting the bad and building on the good, *c'est nous qui choisissons*. A great spur to improvement in native education has come in recent years from America, who has herself her negro problem within her own threshold and has sent missions and provided money to spread her ideas in Africa and Asia. That influence is very definitely non-bookish and vocational, hoping to give an education which will raise the native without divorcing him from his tribe, his social customs (except where they are quite indefensible), his agricultural or craft pursuits, his native language and written or unwritten literature.

CHAPTER XIV

PRIDE AND PREJUDICE

"The chief strength of the Greeks lay in their freedom from hampering intellectual tradition. They had no venerated classics, no holy books, no dead languages to master, no authorities to check their free speculation."

J. HARVEY ROBINSON, *The Mind in the Making*

"It is not to be forgotten that what we call rational grounds for our belief are often extremely irrational attempts to justify our instincts."

T. H. HUXLEY, *Life and Letters*, iii, 42

"If the gentleman's son be apt to learning, let him be admitted; if not apt, let the poor man's child that is apt enter in his room."

CRANMER

"It is generally and not without reason regarded as an excellent quality in a master to observe accurately the differences in ability in those whom he has undertaken to instruct, and to ascertain in what direction the nature of each particularly inclines him; for there is in talent an incredible variety, nor are the forms of the mind fewer than those of the body."

QUINTILIAN

"Man is too noble a being to be obliged to serve as a mere instrument for others, and should not be employed at what he is fit for without also taking into account what is fit for him."

ROUSSEAU

MANY will agree with the saying, that one task, perhaps one of the most important tasks, of the school is to dispel prejudice and encourage the appeal to reason in all that concerns the affairs of our private or public lives. A type of psychology which in the last decade or two has made a great stir in the world is that which attributes all, or by far the larger part, of our actions to the impelling power of our brute instincts, and yields to the reason

only the function of finding means to those ends, or even of finding excuses to offer to the conscious self for following those ends. The ideas themselves are not new. What was new in Freud's teaching was the tremendous emphasis on them, the invention of a technical terminology by which to discuss the insides of our minds where these dark forces held sway, and of a technique for dragging the conflicts there taking place into the light of day, i.e. of the reason.

"Boys are just like people", says Aunt Sarah in Booth Tarkington's *Penrod*, "only they're not quite so awful, because they haven't learned to cover themselves all over with little pretences. When Penrod grows up he'll be just the same as he is now, except that whenever he does what he wants to do he'll tell himself and other people a little story about it to make his reason for doing it seem nice and pretty and noble."

"No, I won't", said Penrod suddenly.

"There's one cookie left", observed Aunt Sarah. "Are you going to eat it?"

"Well", said her great-nephew thoughtfully, "I guess I'd better."

"Why?" asked the old lady. "Why do you guess you'd better?"

"Well", said Penrod, with a full mouth, "it might get all dried up if nobody took it, and get thrown out and wasted."

"You're beginning finely", Mrs. Green remarked.

But Penrod would almost certainly, could he have understood what his great-aunt was getting at, have protested that he really had felt that way, and had not

at all wanted to eat the cookie because he was greedy, and he would very probably have believed himself. What he did in a small matter we all do in great matters, and rationalize our prejudices by giving excellent reasons for them, deceiving ourselves in the process, of which we are in the majority of cases quite unconscious.

As educators, we have to decide our position as to this widespread tendency: and it is very difficult to do. There is in the first place the question whether we ourselves possess prejudices which by example and precept we are passing on to our pupils. And after we have discovered some of these prejudices, there is the still more conscience-racking problem if, as is sometimes the case, the prejudices seem to us to serve a highly useful and commendable purpose which would not be served were we to attempt to get the same result by appeals to reason and fail.

The subject in which difficulties of these kinds are greatest is, of course, religion. But for that very reason the reader will permit it to be passed over here, in favour of examples less likely to wound his feelings, though I am afraid no good example will be quite free from that danger. Take national patriotism. Practically every normal person, at any rate if he has been bred in the same country as he was born in, quite naturally becomes patriotic. Patriotism is a complex sentiment, and a perfectly harmless part of the mixture is affection for the district and the country of one's infant nurture. But patriotism, quite unconsciously, takes liberties with the truth, and that is less innocuous. I have heard the Battle of Waterloo described by English teachers to English

children, and (this was long before the Great War) by German teachers to German children, and it was hardly recognizable as the same battle. An uneasy feeling is left in one's mind that perhaps it was not quite like either of the descriptions. Remember that, I am firmly convinced, the teacher of the one nationality was as certain of his impartiality as the teacher of the other. Unluckily, I have not heard that battle described by a French teacher to French children. Or, to come nearer home, I have heard a lesson on William Wallace in a Northumberland village, where that doughty Scot had in his time locked the inhabitants into the church and fired it. The impression left by that lesson was different from that left by lessons on the same hero in Scotland. Probably the Scottish lessons are the more true, for the national saviour rather than the ruthless raider is the predominant personality in him. But my point is that the angles of view were honestly different. Moreover, it is possible to run to the opposite extreme and praise "every century but this and every country but his own", as Gilbert sang. And if one takes refuge in the *via media* in all things, in the first place one becomes a very wishy-washy sort of person, and secondly, one end of the controversy, as Aristotle himself said, is commonly less wrong than the other (if only we knew which).

Of course, the difficulties we speak of are not met with equally by teachers of different subjects, though that does not at bottom affect the matter much, for it is the general attitude of a teacher to affairs in general—moral, religious, political, public—which cannot fail to communicate itself in some sort to those with whom he comes

in contact. But admittedly the teacher of mathematics does not usually convey serious prejudices in that subject, which is one on which differences of faith are uncommon, though not entirely unknown. And the striking, continuous, and continuing advances made by the natural sciences in the last hundred years or so are certainly attributable to the comparative willingness of men in that province of thought to ascertain and be led by the whole set of facts. Many, like J. Harvey Robinson in *The Mind in the Making*, and Graham Wallas, less directly, in *The Great Society* and others of his books, have preached that the millennium would be here could we only learn to do in morals and politics what we already do in natural science. And that is the millennium towards which most honest-minded people of intelligence and with a scientific training try to help the world, often at some sacrifice to themselves. They love Plato, but truth they love more. Yet has anyone of us ever unflinchingly considered what the world would be like, at any rate in our time, if everyone could be divested of his or her prejudices?

Is truth strong enough to control the mass of mankind? Are prejudices necessary, in order that we may live in some sort of peace and unity, at least with our fellow-countrymen of the same class? Are the individual differences of intellect among normal men such that the truth to some would be meaningless nonsense to others? Is there any absolute truth anyhow, or only truth for this or that level of intellect, and are we to assume that the highest known human intellect has necessarily reached truth in anything? For that highest intellect looks on the

"truth" of some lower intellects as not merely incomplete, but often actually erroneous, so why should not his be the same?

One of the best students I ever had once spoke, incidentally, in an essay on some subject from Plato's Republic, of "leaving aside the absurd myth of being fashioned of various metals in the bowels of the earth". But was it so absurd a myth? I think it showed the extreme insight of the Platonic Socrates to recognize that an appeal to reason would not be able to "sell" his *Republic* to the populace, but that some other sanction would be required. Does not Nietzsche say somewhere, "reasons make the populace suspicious"? And suppose you, reader, were faced with the prospect of bringing into actual being Plato's Republic, or, if you like, some other Utopia more acceptable to your ideals, if only you would teach some such myth, which would you choose—Plato or truth? And which, if it comes to that, are you choosing at this very moment?

Perhaps you are one of those lucky ones whose faith, patriotism, political beliefs, and all the rest are unshakable. In that case you probably owe your happiness to the inculcation of prejudices by your teachers of various sorts, for it is unlikely that your unshakable opinions are true. Many such unshakable people can be assembled, and as they hold many different opinions it is certain that the majority must be holding opinions which are untrue, unless, indeed, you adopt a relative definition of truth such as was hinted at above. At any rate, their opinions cannot be simultaneously true.

For myself, though I confess to almost daily hypocrisy

in one thing or another, I believe in my heart in truth, and that, unless this Creation were that of some cunning devil, truth and the world's happiness must in the long run coincide in direction. It is, I think, just cowardice that makes us, perhaps all of us, hypocrites now and then or often. But there may have been high-minded deliberate hypocrites in the world's history, who taught what they did not believe for the sake of the happiness of others, not their own; and if there were or are such, I honour them. The ordinary teacher had better stick to truth. And though he should show ordinary common sense in waiting till he is sure it is truth, and not a passing fancy, he should not, on the other hand, shelter himself too long under that excuse.

On the other side of the question, let us not forget that reason is a cold-blooded sort of thing, and that no cruelty can be more abhorrent than that of an inhuman logically minded monster. Portia brought logic to her aid and outdid Shylock on his own ground, but we do not approve because of that, but because we feel our instinct rebelling against the "just" verdict. A perfectly watertight and logical system of discipline in school or state, executed mechanically, can have, in spite of its perfection or because of it, the most disastrous consequences, while a much less logical system, administered with mercy and a little elasticity, together with a sense of humour, will succeed. Presumably that is because the logic and rationality of the former is not really perfect, but the fact remains that people, motivated entirely by their reasons, have a tendency to lose their sense of relative values and to make mountains out of molehills.

There have been periods in the world's history when reason was more in favour, and in others prejudice and tradition. Some centuries in Greece, some in Rome, were ages of reason; the Enlightenment in the eighteenth century, the notorious "Age of Reason" itself, the last quarter of the last century, seem to me to have been "rational" periods. To-day, there seem to be signs of a reaction. In Germany, at least, one reads often attacks on *Rationalismus*, which appears to be associated with the time of discipline and anti-individualism of the pre-war period. Reason appears to have been now claimed as an ally, now feared as an enemy, by followers of freedom. And it must be confessed that the epochs of the supremacy of reason have nearly all something about them which repels taste and the moral sense.

One thing, however, seems clear, that prejudices which are born of misrepresentation and actual untruth must most certainly be evil; and such prejudices are only possible of growth where there is ignorance of nation concerning nation, of class concerning class, of religion concerning religion. The peculiar difficulty of the educationist about matters of opinion and belief is that he is faced with the dilemma, either of using the educational period consciously or unconsciously to inculcate those prejudices which he thinks right, or of placing upon the immature child the responsibility, which in some matters is tremendous, of making a choice for himself. But is there really such a clear-cut distinction? Is there not the possible course of making the school a microcosm of the outer world, containing the children of all opinions of parents, and carefully refraining from calling attention

to these differences of opinion until they actually arise in the life of the school in some childish form, when there might be discussion and decision by the children about the particular point, which would not as a rule be a major clash of opinion, but would serve as a training in seeing the point of view of others while adhering to such of one's own opinions as seemed to an honest mind to stand the test of criticism by one's fellows and one's own conscience.

That school should be such a microcosm, however, implies that it should contain children of all classes and even of all religions. Against the practicability of such a system, however, there is a great body of public opinion, and there are apart from prejudice other practical difficulties which cannot be minimized.

The aims of education which are explicitly enunciated by teachers, parents, and members of the public are not always the real purposes which actuate them when they take part in the process of education: and it cannot be denied that one of the motives which influence the choice of a place of education is the desire to share in the social standing conferred by a certain school. Teachers are in many cases swayed by a similar motive in applying for posts, or head masters in deciding upon curricula and time-tables: while the general public is not unaware that school A and school B differ socially; and shows a tendency to be divided into those who think B plebeian and those who call A snobbish, among which latter class are, it is to be feared, some who would join the other party if they could. I have no desire to accuse the whole of society of hypocrisy in this matter, but only to express

my belief that all of us are in danger of being influenced by such considerations without admitting it to ourselves, or possibly even being conscious of it.

There are in Great Britain several kinds of educational ladder, which are largely of different historical origin, and which serve different purposes: it is fairly easy to distinguish three of these. First, there are the public schools in the narrower sense, mainly residential in character, schools like Eton, Winchester, Haileybury, Oundle. These receive boys from preparatory schools, which often are also residential, and large numbers of their scholars, probably a substantial majority, pass on to a university or to the army or navy. There are two streams ascending this ladder: one composed of boys of very considerable intellectual ability, probably all over 125 in "intelligence quotient",[1] who win an almost free education (after the preparatory-school stage) in severe competition; the other composed of boys whose parents can pay the whole bill, i.e. parents who are either very well-to-do or, being moderately so, are willing to deny themselves luxuries and even necessaries to enable their children to have the advantages of a public-school education. This second stream of boys is not necessarily devoid of brains. On the contrary, it also almost certainly averages distinctly over normal intelligence, say about 110 I.Q., and undoubtedly contains some individuals as able as are the competitive "scholars". But it also carries a certain number of boys below average intelligence, or, at least, we may strongly suspect this.

[1] An intelligence quotient is the percentage which mental age bears to chronological age, so that 100 is normal.

A second ladder is that formed by grammar schools for boys and high schools for girls, which are not usually residential, and which keep their pupils from quite an early age (say nine years or less; before nine such children are often at small private schools in ordinary houses) to 17 or 18. Many, however, drop out at an earlier age, and the percentage of those passing on to a university is very much smaller than is the case in the public schools. The line of demarcation, however, is not always easy to follow: and, on the other side, many of these schools (an increasing number) form a part of the third great ladder, that which is the official educational system of the country, and whose unit members (since the natural name for them, and that actually used in Scotland, has been already employed for the public schools) we may call state schools. State schools are mainly elementary schools and secondary schools; and there are also central schools, technical schools, higher elementary schools, advanced divisions (in Scotland), and other branches. The organization is at present (1928) on the eve of considerable developments and changes in nomenclature, and in the co-ordination of its different parts, of which notice is taken elsewhere.

The elementary schools are entirely supported by public money, approximately one-half coming from the central Treasury in London and one-half from local rates. The secondary schools are supported by approximately equal contributions from three sources, namely the central Treasury, the local rates, and the scholars' fees. But always 25 per cent. of the scholars have their fees remitted, and this percentage is in many instances

40 per cent. and in a few 100 per cent., in which latter case the cost is again entirely borne by the public.

The numbers ascending these three ladders are very different, being smallest in the case of the public schools, and far the largest in the case of the state schools: and there is a strongly marked social distinction between them. The marks of the higher social class are in accent, behaviour, and dress; the latter, however, being less important, provided certain minimum essentials are fulfilled. Accent is indispensable, and the behaviour must conform to certain conventions, which favour a high standard of personal honour, but do not always exclude that form of departure from perfection which permits the definition of a gentleman as one who is never unintentionally offensive. To what extent is it the duty of the teacher in the state school to endeavour to give to his pupils these marks of social distinction? Of course, the true answer is that he ought not to care for these things *merely* as social badges, and ought not, on the other hand, to hold them in contempt if they have, as may be the case, true values as well as the conventional. Attention to accent, for example, is praiseworthy for other reasons; but it is very difficult to steer a true course between unworthy and snobbish motives on the one hand and disdainful neglect on the other. The teacher who holds as best he can to the *via media* can also have the consolation that attempts to put an "aristocratic" accent into the mouths of pupils are not often successful, and that were they to become successful on any large scale, and state-school children to speak just like pre-

paratory-school children, a new distinction would assuredly be invented by the exclusive classes.

There is one nation where circumstances made it seem for a while as though the state schools would be the schools for all. In the northern states of the American Union rich and poor sat for a time on the same school bench. Even to-day in many districts the rich man's son is much more likely to attend the state school than would be the case in England: and one state actually passed a law making attendance at the state schools (and no other) compulsory. It is very possible, however, that this law was aimed as much at religious bodies as at aristocracy: and, in any case, it has been declared unconstitutional, and has not come into force. To the logic leading towards such a law we shall return presently. In default of such compulsion it is abundantly clear that social distinctions between private and state schools will continue. Whatever the defence for such may be, there cannot well be any defence for, or toleration of, social distinctions between various types of *state* school. The possibility of such distinctions is one of the great drawbacks to that system of differentiation of types of secondary school which appears to be most in favour at present in England, namely a system providing at least two, and possibly three or more, kinds of education for different kinds of children in different school buildings.

For children cannot all profit by the same kind of education. Their minds are, at least, as different as their bodies. Nurture, fresh air, good food, suitable exercise, can influence a man's physique, but cannot add a cubit to his stature. Some of us are short and some of us are

tall, some blue-eyed and some brown: and we have equally variegated minds. Schooling can do for the mind what food and exercise can do for the body, but no more. To a child's mental stature schooling may add an inch, but not a cubit. There are irreducible differences left when all is said and done, and these differences are such that no one type of schooling will suit all children. The differences show more and more as the children grow older: so that while the kindergarten may do for all, and the junior school with devices such as "multiple tracks" may do for most, for the adolescent decidedly different kinds of treatment are imperative; and in England these are given in different kinds of school. *The difficulty is to create the different types of school side by side on a social equality, without permitting them to appear higher or lower in a scale of snobbishness.* The difficulty arises because one of the types of school will resemble the present socially favoured schools more than other types will: because one type of school will suit few, and another will suit many, and rarity causes a rise in value; and because graduates of one type of school will tend to obtain in after-life better-paid posts than those of another type.

The present type of secondary school has a bookish and abstract curriculum; it looks towards the university and the professions, and it gives its pupils an education which is almost entirely useless if they do not go to a university or into a profession. There is a perfectly definite need for such a curriculum, but it will never suit more than about 10 per cent. or so of the child population, or, since this is a difficult matter on which to express an opinion, let us say, at any rate, never more

than a quarter; and this fraction, whatever it is, ought *all* to go on to universities or other forms of higher education, whereas to-day only a very small proportion do so. The 10 per cent. (or more) of our children taking such a curriculum ought to be more carefully selected than is the case to-day; everyone of them ought to have an intelligence quotient of at least 115 (if one-quarter were to be chosen it would fall below that), and an interest in abstract studies; and their way through the university ought to be made possible even if they are poor.

But they ought not to be considered *superior* to the 90 per cent. To say that a child is intelligent is not a compliment, it is a description. The child cannot help being intelligent or unintelligent, as the case may be, and deserves no more credit for it than for his blue eyes or his snub nose. He deserves credit or discredit, I think, for his use or misuse of his intelligence; for though some would say that even here *tout comprendre c'est tout pardonner*, yet to pardon need not mean to condone.

But if these clever children are segregated, as at present in England, into separate schools, while their less intelligent brethren are provided with other types of curriculum in other schools, it will be almost, probably quite, impossible to prevent social distinctions accompanying the distinction of type of mind. And this is why it is worth while considering whether such segregation is really necessary. The arguments in its favour are very strong. They overlap; but one can distinguish the arguments of efficiency, of economy, of close personal influence, of *esprit de corps*, even arguments of justice and equity.

The separate secondary school is very efficient in attaining its narrow aim. No doubt it is easy to point to faults and weaknesses, but they are not caused by the fact of segregation, which is what we are at present discussing. Secondary schools have been the more efficient the more they have attended strictly to their own business. The German pre-war *Gymnasium*, for example, was extremely efficient, even without the advantage of a widely cast net of selection from the primary schools, which ought to make a still higher standard attainable. In a school which catered not only for the demands of the university and the professions, but also for those of commerce, of art, of craft, and of the factory, it is very doubtful whether the same standard of efficiency could be reached which is attained to-day in separate secondary schools, commercial central schools, art schools, technical schools. If one school were to attempt all these various tasks, it could not have the "atmosphere" which helps to educate in each of the separate schools. The ordinary process of organization would seem to lead to such separate institutions.

The economy argument is double-edged. It is probably easier to make out a case for the cheapness of the "comprehensive high school", where all these courses would be under one roof, than for the separate schools, if this comprehensive school were allowed to grow in size. But the argument of limiting the school so that the head master can know personally all the scholars makes a really large school impossible for those who consider this important, and then economy steps in in favour of separate schools; for a small and intellectually mixed school would need too many kinds of classes and masters to pay, unless,

indeed, the intellectual standard were so lowered that one course served for all, which is contrary to our whole hypothesis. Here, too, appears the "justice" argument, though it is not often heard in our country, where injustice is usually assumed to be done only to the poor and ignorant. In America, however, there is sometimes heard the saying, "A boy is entitled to his fair chance, *even if* he is of superior intelligence". The suggestion is that in a high school for all the general intellectual level is so lowered that the cleverer are handicapped, and are not receiving the kind of mental pabulum which is their due, that, in fact, they are being starved. While this, of course, need not be the case in a large and well-classified school with different kinds of courses for each category of pupil, it is certainly a danger if the schools must be small, and therefore cannot be well classified. *Ergo*, separate schools.

The *esprit de corps* argument is a strong one, but is exactly why some people object to the separate schools for different intellectual levels: for *esprit de corps*, like fire, is a good servant but a bad master. Looked at with other eyes, it easily can be called class-consciousness, or snobbishness, or parochialism.

There is only one argument on the other side, but it is one to be given very serious consideration; that the social solidarity of the whole nation is more important than any of the defects to which a comprehensive high school may be subject, and which may in any case be ameliorated if not even abolished. To have memories of life together in common, to have worn the same school cap, have played for the same team, will mean much for

men and women even although they may not at school have been of the same intellectual level, and may have enjoyed different courses. And in a comprehensive school, under one head, there are many more chances of transferring a child from one course to another, if he be found to possess talent of a kind not at first suspected; and thus the nightmare of being tested and judged once and for all at the tender age of 11, and made or marred for life, will be removed for good.

If we turn back for a while from the education of children over 11, and let our minds dwell on our present problem as it concerns education before that age, we are at once attracted by the movement in Germany since the Revolution of 1918, to establish a common school for all classes, the *Grundschule*. Any remarks during which one has occasion to speak of the educational policy of "Germany" ought, however, to be prefaced by the explanation that the old Germany left this subject definitely to the separate kingdoms of which it was composed, and had no Imperial law of education. And even in the new Germany, although education is now mentioned in the constitution, only rather general directions are given to which the regulations of the separate components of the Reich must conform, so that nothing can be said to apply without qualification to the whole country. With this caution, however, it may be said that Germany now has a compulsory common school for the first four years of school-life, to which all children, rich and poor, dull or clever, must go; so that here certainly we have one education for all.

Even in Germany, however, there remain distinctions.

I do not refer to the possibilities of evading the new law by obtaining medical certificates stating that the child's health makes a tutor at home imperative, or anything of that sort. No doubt such devices will in time be made impossible except in genuine cases. But even where you have a common school with compulsory attendance, there will, of course, be social distinctions between a school in one district and that in another. This can hardly be laid at the door of the educational administration, but is rather another way of stating the larger fact that there are social distinctions in the world outside the school which lead to the segregation of classes in certain quarters of a city.

Above the age of 10 or 11, however, Germany, too, divides its children into categories attending at different buildings. There are some exceptions to this, such as are provided by the existence of the so-called *Aufbauschulen*, and by the fact that in some parts of the German-speaking world the *Grundschule* itself lasts for five or six years (Switzerland and Austria). But on the whole the Old World makes the separation referred to, either from the beginning or after 11.

Only in North America is the passage from primary to secondary education unaccompanied by this phenomenon. There, although again one has to remember that each state is a law unto itself, there is, on the whole, a smooth passage up the whole school, and usually up the same school in the same building, for all categories. That this is the cause of the alleged backwardness, in an intellectual sense, of the schools of the United States of America is possible. But it does at least conform to

the democratic demand for an avoidance, among the children, of those distinctions which are, it would seem, inevitable among adults, but which may be even among adults confined to distinctions of rank and fortune only and not complicated by that greater possibility of misunderstanding resulting from separate lives during school-days.

The question whether there is really at the age of 11 or 12 any crisis in the life of a child which demands a bifurcation of the educational path is one which all do not answer in the same way. The recent pamphlet (1928) of the English Board of Education considers that such a change is needed, and the arguments in its favour are given in another chapter. But others have urged that the crisis is not so much in the life of the child as in the mind of the administrator, who finds at that age the difficulty of proper classification of children of different intelligence becoming acute, and determines his policy accordingly. The American plan, quite apart from the question of the comprehensive high school, has another suggestion to offer. There, instead of a snapshot examination which at 11 decides the course which a child shall thereafter follow, they have the institution of the junior high school, which is designedly a trying-out period of three years; after which, in the senior high school, the different courses are followed, upon which by trial and by advice the child and the parents have decided as the three junior high school years passed.

The junior high school differs from an English central or modern school, or from a Scottish advanced division, in that *all* the children pass through it. It is not an

alternative to the secondary school, but is the porch leading to it. It has some resemblance to the German *Aufbauschule*, which also postpones the decision to diverge irrevocably into academic or less abstract work.

If we may look back and summarize at this point, we see that the problem is one of reconciling the fact of inborn differences both of physique, temperament, and intelligence with the democratic demand for equality. In certain senses no political or ethical creed can make people equal in these matters more than in height or colour. But the demand for equality of opportunity is one to which everyone feels his heart respond. At what point in a person's life has he had his opportunity? At some point even the most radical thinker, in the most Utopian of states, would agree, presumably, that different individuals must take up different kinds of work. The educational tendency of the last quarter century has been to fix this point, this first critical point in the life of a child of the people, at 11 or thereabouts. England does so perhaps most decidedly; Germany almost equally so. Scotland is less definite, and gives several chances, up to 13, for a child to "qualify", as they call it, and in theory at least makes the choice of kind of education, after qualifying, depend on the wish of the family, and not on how well the child has passed the qualifying examination. America passes the scholar from the primary grades into the junior high school grades with little, if any, more fuss than it passes from grade 3 (say) into grade 4; and uses the junior high school as a more leisurely deciding period as to the future.

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